901 MARKET

at Fifth

Draft
Environmental Impact Report

83.404E

Publication Date: May 18, 1984
Public Hearing Date: June 21, 1984
Comment Period: May 18, 1984 through June 21, 1984

Written Comments should be sent to the Environmental Review Officer
450 McAllister Street, San Francisco, CA 94102

DEPARTMENT OF CITY PLANNING 450 McALLISTER STREET · SAN FRANCISCO, CALIFORNIA 94102

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I. SUMMARY

A. PROJECT DESCRIPTION

The project sponsor, the Lurie Company, proposes to rehabilitate an existing 220,000-gross square-foot building formerly occupied by retail and office uses into retail and office space, and to update its services to conform to current seismic, safety, and building code standards. The rehabilitated building would contain approximately 225,000 gsf, of which about 80,000 gsf would be retail space and about 145,000 gsf would be office space. The additional approximate 5,000 gsf is the result of alterations to the existing 6th floor. The project site is located on Assessor's Block 3704, Lots 1 and 62 and contains 31,475 square feet. The site is within the City's downtown retail district, southwest of Union Square, on the southwest corner of Fifth and Market Streets and north of Stevenson Street.

The project site contains an existing six-story building formerly occupied by retail and office uses. This structure is rated "A" by the Foundation for San Francisco's Architectural Heritage (Heritage) and "4" by the Architectural Inventory of the Department of City Planning. The building has also been identified by the City as a structure appropriate for adaptive reuse in the proposed "Downtown Plan." The building formerly housed the Hale Brother's Department Store and, later, J.C. Penney's department store. This architecturally significant building would be rehabilitated, the building entrance restored, and a new office lobby and possibly a skylit five-story atrium added.

Pedestrian access to the proposed building would continue to be from Market and Fifth Streets. Three loading docks would be added with access provided off Stevenson Street.

Construction is expected to occur over a one-year period beginning in the fall of 1984 and ending in the fall of 1985.

B. ENVIRONMENTAL IMPACTS

1. Initial Study

An Initial Study was prepared for the 901 Market Street project to identify potential environmental effects resulting from the proposed project; these issues are covered in this EIR. Certain potential environmental issues were determined to be insignificant and are therefore not addressed in this EIR. These include: Visual Quality; Cultural; Land Use; Noise; Project-Related Air Quality Impacts and Impacts from Odors/Burning of Materials; Biology; Population; Utilities and Public Services; Geology/Topography; Water; and Hazards.

2. Transportation

The proposed project would generate about 11,400 new daily person trips to and from the site. About 1,155 of these trips would occur during the p.m. peak hour.

Discounting the project's pedestrian trips (primarily to and from the retail portions of the project), the project would increase the existing peak hour travel (in and out of the downtown) by less than 0.3%. Similarly, the project travel would represent 0.5% of the trips generated by other cumulative downtown development.

The project would produce a net increased parking demand of about 170 spaces (100 long-term and 70 short-term). The increased demand for off-site parking would increase parking occupancy by about 1.5% in lots and garages within walking distance (2-3 blocks) of the site. Although overall parking occupancy in the project area is high, parking is available in close proximity to the site. The existing garage at 5th/Mission (operated by the San Francisco Parking Authority) is about 65% occupied: 1,170 spaces occupied and 630 spaces vacant. The City is considering modification and expansion of this facility, which would result in a net increase of 300 spaces. The City will also be opening a 700-space garage on Third Street near Howard. These garages would provide ample capacity for the project's parking demand and the cumulative demand of the proposed 5th/Market project on the east side of Fifth Street (page 41).

3. Air Quality

Construction activities may result in a temporary increase in a limited amount of suspended particulate matter (dust) in the immediate project vicinity (e.g. during sidewalk

repair, hauling debris, etc.). Direct atmospheric emissions from the operation of the proposed project would be diluted well below ambient air quality standards before reaching ground level. State and federal eight-hour average carbon monoxide (CO) standards from vehicular emissions generated by the existing conditions and cumulative development with or without the proposed project are approached but not violated at Howard and Fifth and Howard and Fourth Streets. Regionally, impacts would be due to the increase in vehicle miles traveled (VMT) associated with the project. The project itself would increase vehicular emissions by a small amount. However, in combination with emissions from other projects, ozone concentrations could be exceeded at downwind locations outside of the Bay Area (page 49).

4. Energy

The total estimated annual energy use within the proposed project (based upon other City projects and Title 24 compliance) would be 20 billion BTU or 3,500 barrels of oil (page 55).

5. Housing

The housing demand generated by the converted and newly constructed office space would be 112 units based on the OHPP formula (page 63).

C. MITIGATION MEASURES

MITIGATION MEASURES INCLUDES AS PART OF PROJECT

- Establishment by the project sponsor of a comprehensive transportation system management (TSM) program aimed at reducing the peak-hour effects of project travel (page 74).

- Fulfillment of the OHPP requirements by causing the construction of 112 off-site housing units in accordance with OHPP guidelines.

- The project sponsor would require the contractor to implement a twice-daily watering program during debris hauling and other exterior construction activities, which would reduce airborne construction dust and particulates by about 50% and reduce the likelihood of exceeding the state and federal standards (page 75).

- Consideration by the project sponsor of various energy saving devices (e.g. fixed shading devices, improved insulation). Final decisions would be made on the basis of lifecycle costing and compatibility with the overall design (page 75).

D. ALTERNATIVES

1. No Project

This alternative would involve no change to the project site as it now exists and no environmental impacts associated with the proposed project would occur. The project sponsor has rejected this alternative because it does not permit the utilization of an existing structure, nor provide for preservation of this building (page 79).

2. Rehabilitation with All Retail

In this alternative the existing building would contain approximately 220,000 gross square feet of retail space. The exterior of the building would be rehabilitated with the same features as the proposed project. Retail use would generate more pedestrian trips, more daily trips, and more peak-hour trips than the proposed project. Air quality and energy impacts would also increase. This alternative was rejected because it does not meet the project sponsor's objective of providing a mixed-use retail/office project (page 80).

3. Office Use and Minimum Ground-Level Retail Use

This alternative would provide the minimum amount of retail space required at ground level along the Market Street frontage. There would be 6,000 gsf of retail and 214,000 gsf of office uses. This represents a 93% decrease in retail space and a 47% increase in office space over the proposed project. Impacts would be fewer in all areas except for an increases in the housing demand according to the OHPP formula. The project sponsor rejected this alternative because it does not satisfy development objectives for providing an amount of mixed-use retail/office space that would allow marketable ground floor retail and appropriate configuration of office space (page 81).

II. PROJECT DESCRIPTION

A. SPONSOR'S OBJECTIVES

The project sponsor, The Lurie Company, proposes to rehabilitate an existing six-story, approximately 220,000-gross-square-foot retail/office building, including the basement and mezzanine, into retail and office space. The owner's objectives for this rehabilitation are:

- Preservation of an architecturally significant building
- Provision of uses in a mix that effectively utilizes building configuration
- Visual improvement of the southwest corner of Fifth and Market Streets
- Revitalization of retail activity at the southwest corner of Fifth and Market Streets
- Creation of a focal point to attract tourists and city residents to the central Market Street area
- Adaptive reuse of an existing large floor commercial building
- Diminution of hazards due to lack of modern seismic and fire protection systems in the existing building
- Provision of first-class large floor office space (above 25,000 gross square feet per floor)
- Provision of office and retail uses at an important transportation node
- Earning a reasonable rate of return on the investment.

B. LOCATION OF THE PROJECT SITE

The project site is located on Assessor's Block 3704, Lots 1 and 62. The 901 Market Street building is located on the southwest corner of the Fifth and Market Street

intersection midway between San Francisco's financial district and the Civic Center (Figure 1, page 7). It is also at the southwest edge of the Downtown Retail (C-3-R) District, southwest of Union Square, southwest and across Market Street from the Powell Street Cable Car Turnaround and Hallidie Plaza. The site has a permitted Floor Area Ratio (FAR) of 10:1, while the actual FAR of the project is 7:1. It is located in a 160-G Height and Bulk District. The maximum dimensions of a "G" bulk district allow full-site coverage up to 80 feet in height; above 80 feet, the maximum building length permitted is 170 feet and the maximum diagonal dimension permitted is 200 feet. The actual building height is 86 feet, and above 80 feet, or at the 6th floor level, the actual building length and diagonal dimensions are 215 feet and 246 feet respectively.

C. PROJECT CHARACTERISTICS

The existing six-story building contains about 220,000 gross square feet. 901 Market Street, also known as the Hale Brothers Department Store, and later J.C. Penneys department store, was built in 1912. Compositionally, it is a two-part vertical block over a glass base with Renaissance/Baroque ornamentation. This building is rated "A" by the Foundation for San Francisco's Architectural Heritage (Heritage),[1] is rated "4" by the architectural inventory of the Department of City Planning[2], is on the Department of City Planning's list of "Architecturally and/or Historically Significant Buildings" (adopted by City Planning Commission Ordinance No. 8600) and is identified in the proposed Downtown Plan as a structure to be retained for adaptive reuse. Its rehabilitation would preserve a building determined to be architecturally significant.

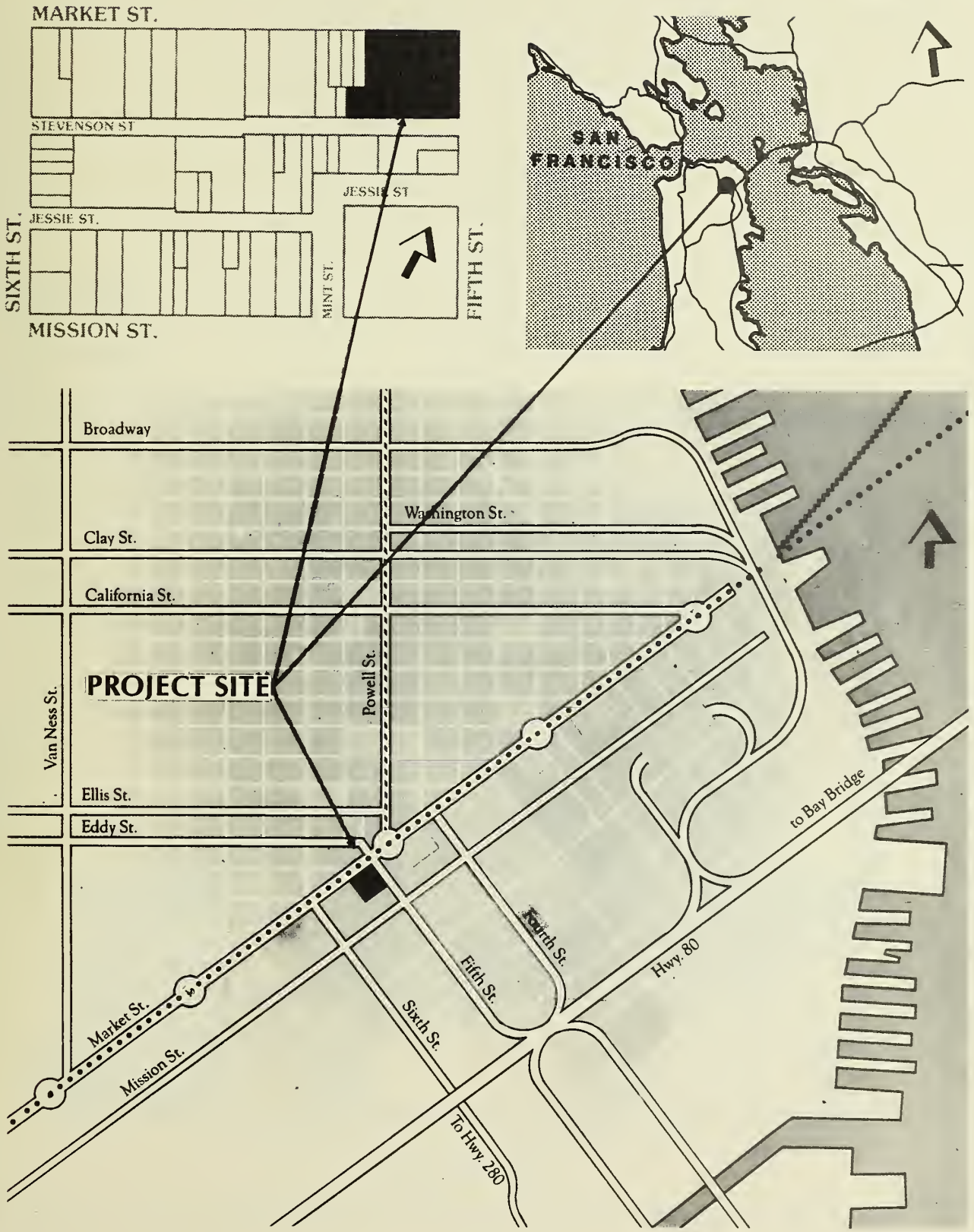
Interior rehabilitation includes the adaptive reuse of approximately 220,000 gsf as retail and office space, updating its services to conform to current seismic, safety and building code standards, and adding approximately 5,000 gsf to the 6th Floor as the result of alterations. The concrete structure would be reinforced with steel seismic bracing and concrete floor diaphragms. It would also have a fully automated sprinkler system as well as other life safety features and handicapped access. After rehabilitation it would contain about 80,000 gsf of retail space and approximately 145,000 gsf of office space. Three loading docks would be added with access provided off Stevenson Street (Figures 2-5, pages 8, 9, 10, and 11).

The exterior would also be rehabilitated to reflect its original design details with a restored building entrance and street level awnings.

SITE LOCATION

FIGURE 1

SOURCE: EIP CORPORATION

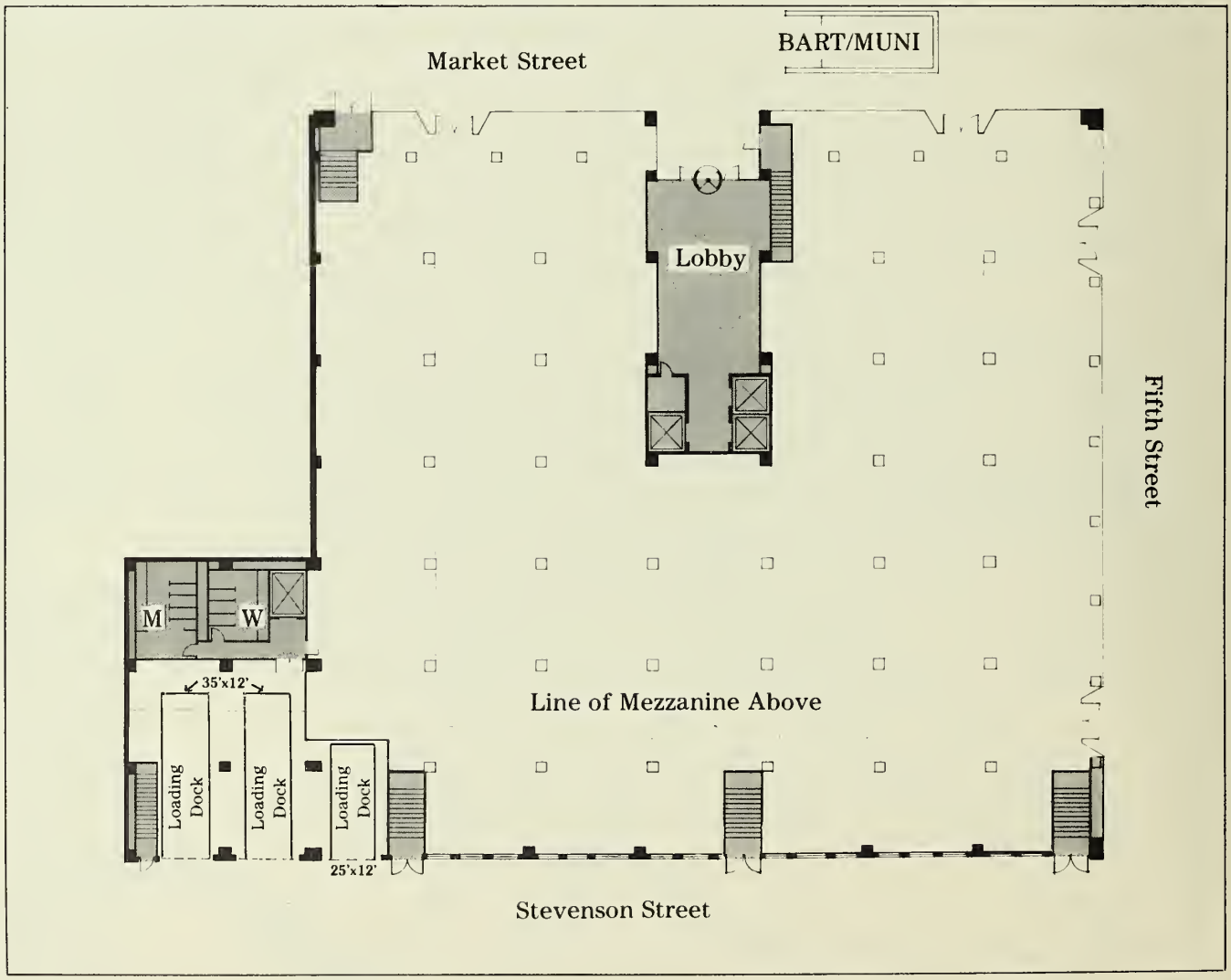


GROUND LEVEL FLOOR PLAN

FIGURE 2

SOURCE: GENSLER AND ASSOCIATES

SCALE 0 8 16 32 FEET

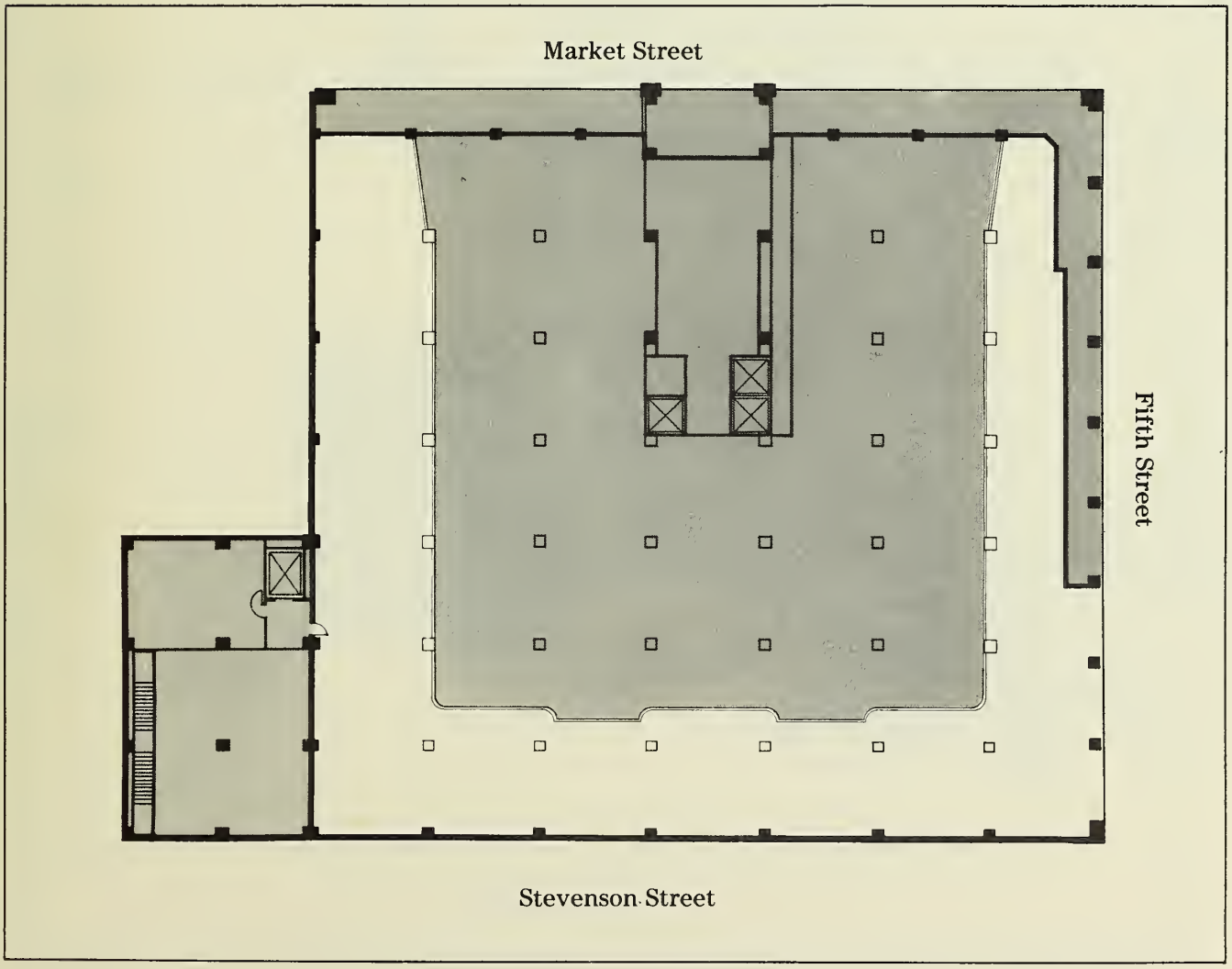


MEZZANINE LEVEL FLOOR PLAN

FIGURE 3

SOURCE: GENSLER AND ASSOCIATES

SCALE 0 8 16 32 FEET

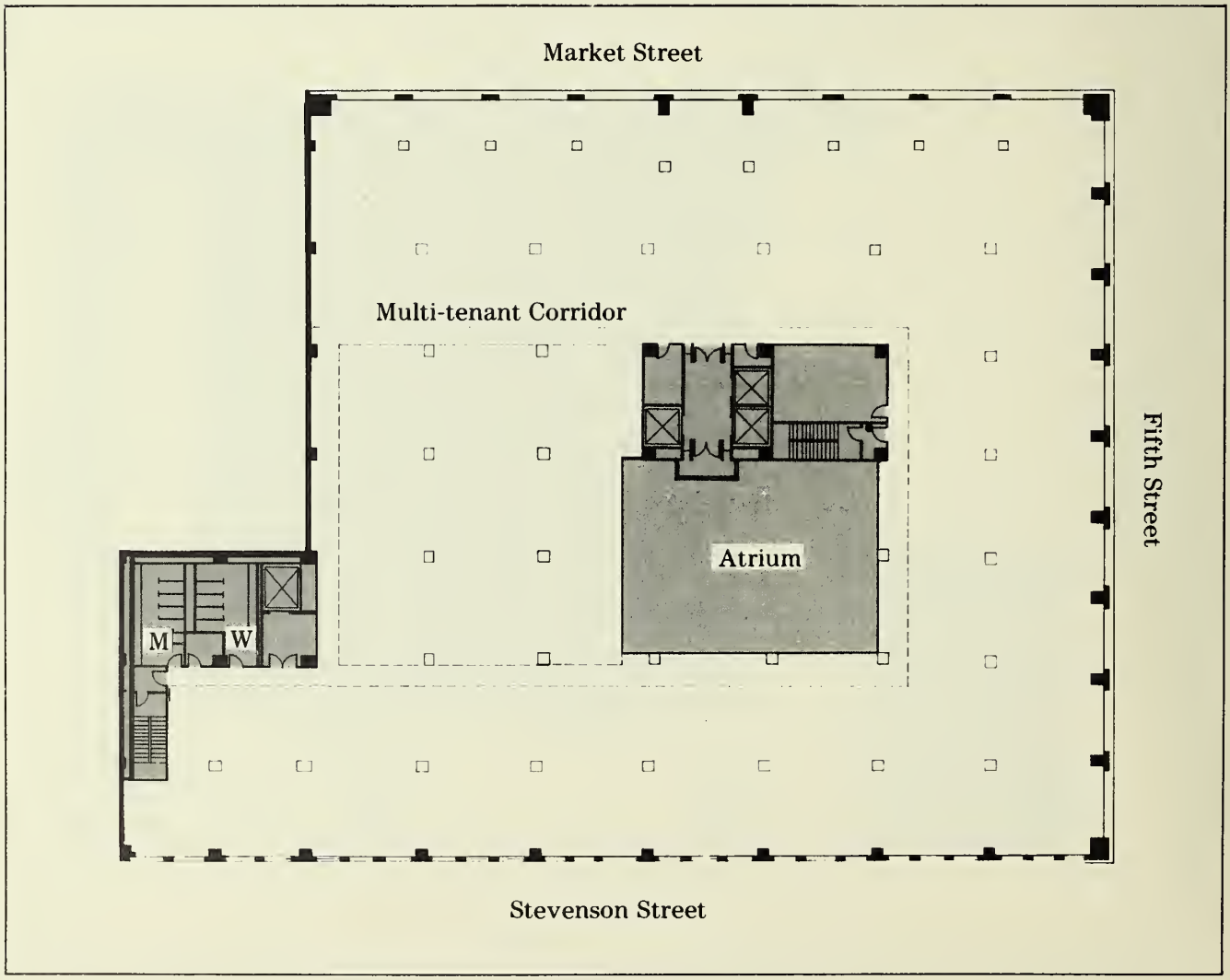


TYPICAL UPPER LEVEL FLOOR PLAN

FIGURE 4

SOURCE: GENSLER AND ASSOCIATES

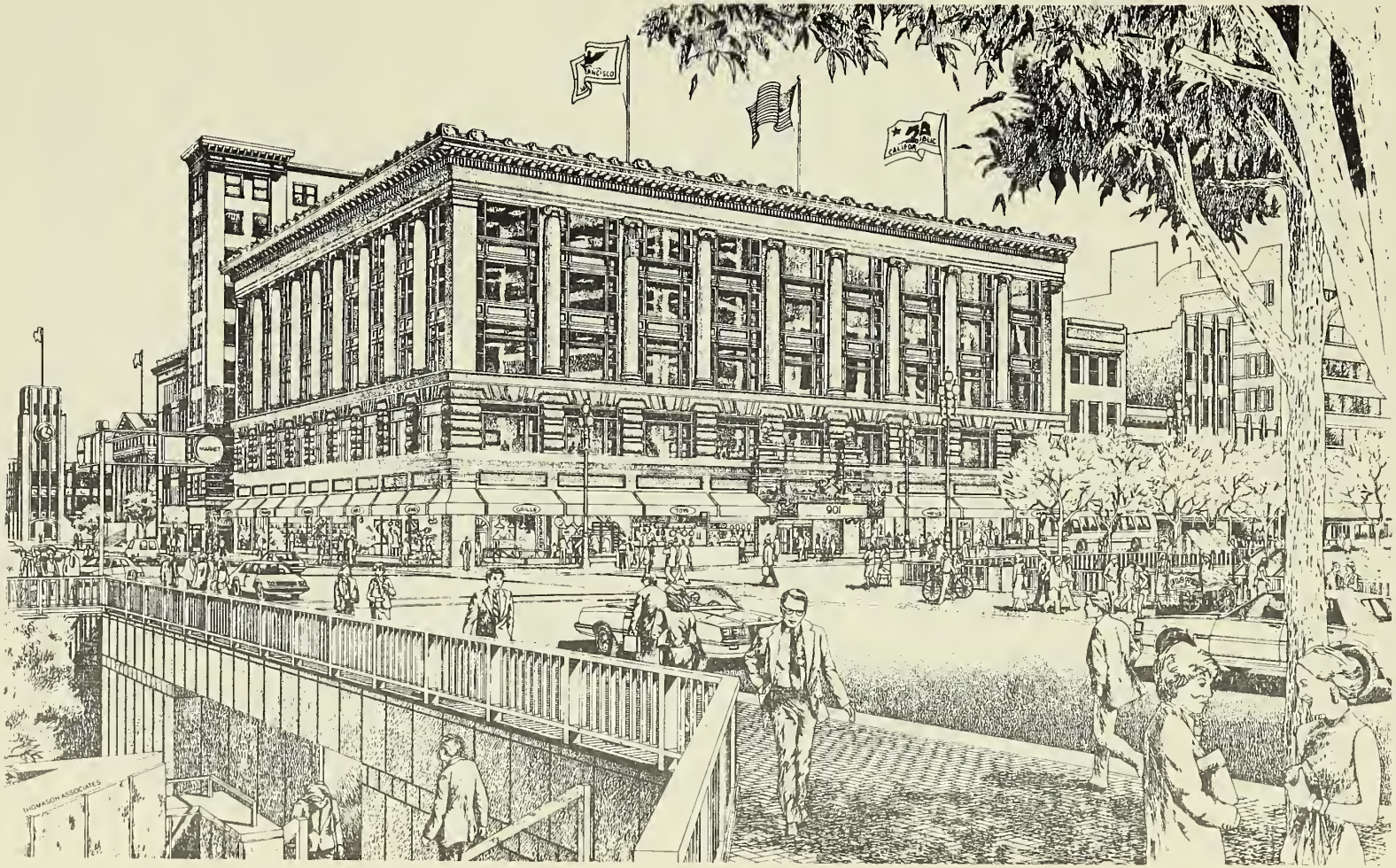
SCALE 0 8 16 32 FEET



BUILDING PERSPECTIVE (LOOKING SOUTHWEST FROM HALLIDIE PLAZA)

FIGURE 5

SOURCE: GENSLER AND ASSOCIATES



D. PROJECT SCHEDULE AND REQUIRED APPROVALS

The architectural firm for the proposed rehabilitation is Gensler and Associates of San Francisco. The estimated construction cost of the project is $10,000,000. Construction is expected to occur over a one year period, beginning in the fall of 1984 and ending in the fall of 1985.

The first step in processing the proposed project is a public review of the Draft EIR (DEIR) and responses to comments collected during the DEIR review period. If the document is deemed adequate, the City Planning Commission will certify the EIR. The proposed project would be subject to the policy of the City Planning Commission to review all downtown projects under the Commission's powers of discretionary review.[3] Evaluation criteria under this process include the protection and enhancement of the pedestrian environment, preservation of architecturally significant buildings, adequate and appropriate means of transportation to and from the project site, energy conservation, physical relationship of the proposed building to its environs, and effects of views from public areas on the City skyline. Under its discretionary review procedures, the City Planning Commission would review the building design and its environmental context, approve, approve with conditions, or disapprove the site permit for the project.

The project conforms with existing Planning Code requirements and policies of the proposed Downtown Plan.

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[1]The Foundation for San Francisco's Architectural Heritage, Splendid Survivors, San Francisco, California Living Books, 1979.

[2]The Department of City Planning's rating system progresses from "5" to "0," with "0" being the least important in architectural or historic value. Buildings with a rating of "3" or higher represent the best two percent of the architecture in the City.

[3]San Francisco Planning Commission, Resolution 8479, adopted January 17, 1980, applicable to all proposals in the C-3 districts.

III. ENVIRONMENTAL SETTING

A. TRANSPORTATION

As shown in Figure 6, page 14, the project site is directly accessed by Market, Stevenson, and Fifth Streets. Both Market and Fifth Streets are four-lane, two-way streets adjacent to the project site. Stevenson Street is a narrow (21-foot curb-to-curb width) one-way, eastbound street which primarily provides local access for service vehicles. Although parking is prohibited along the north side of Stevenson, vehicles do park along the curb and on the sidewalk, reducing the available street width. The project site is within the "downtown core" which the Comprehensive Plan identifies as an area "where a continuing effort should be made to improve pedestrian, transit and service vehicle access and circulation; where priority for the use of the limited street and parking space within this core should be available for these functions; and where a continuing effort should be made to reduce the impact of the private commuter vehicle."[1]

Regional access to/from the East Bay and Peninsula is available via I-80 freeway ramps along Harrison and Bryant Streets at Fourth, Fifth, Seventh and Eighth Streets. Access to the North Bay would be on surface streets with the primary route along the Van Ness Avenue corridor. Each of these streets is designated a "primary vehicular street" in the Transportation Element of the City's Comprehensive Plan.

The project site is within a quarter-mile (2-3 blocks) walking distance of 34 Muni lines, Golden Gate Transit's transbay lines, and Samtrans mainline Peninsula service (see Figure 7, page 15). The Powell Street BART and Muni Metro subway station is adjacent to the site. Market and Fifth Streets are each designated a "transit preferential street" in the Comprehensive Plan.

Adjacent to the project site, sidewalk widths are 32 feet along Market Street, 12 feet along Fifth Street and 6 feet along Stevenson Street. All of these measurements correspond to the width officially designated in City records.

---

[1] San Francisco Department of City Planning, Transportation, An Element of the Master Plan, reprinted January 1983.

EXISTING STREET NETWORK

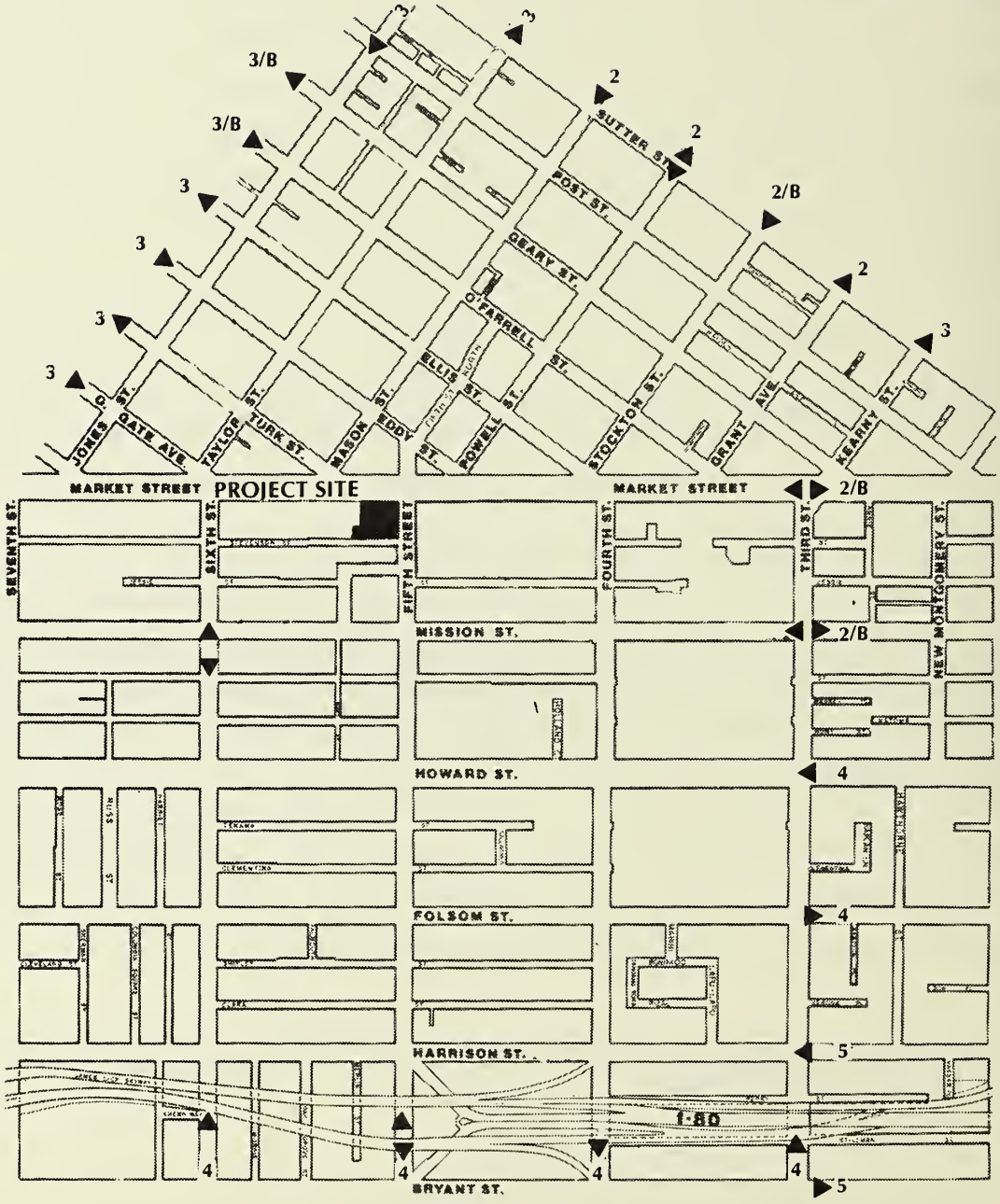
FIGURE 6

TRAFFIC DIRECTION ▶

NO. OF LANES PEAK HR. → 2/B
/PLUS BUS LANE(S)

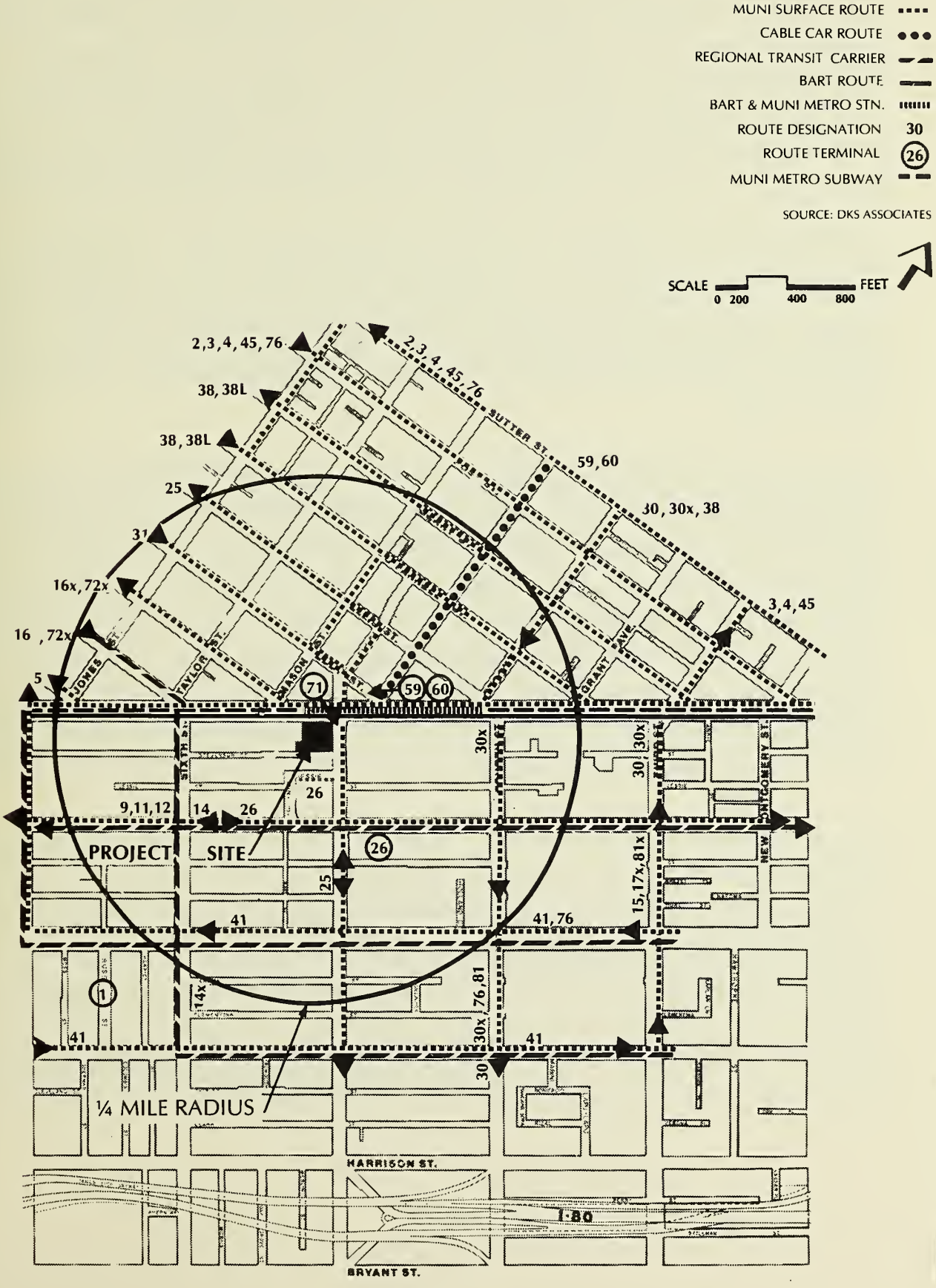
SOURCE: DKS ASSOCIATES

SCALE 0 200 400 800 FEET



EXISTING TRANSIT SERVICE

FIGURE 7



B. AIR QUALITY

San Francisco's air quality, in general, is among the least degraded of all the developed portions of the Bay Area. Because of the prevailing westerly and northwesterly winds, San Francisco is more a generator of its own air quality problems (especially carbon monoxide (CO) and total suspended particulates (TSP) and a contributor to those in other parts of the Bay Area (especially ozone), than a recipient of pollutants from elsewhere. This is because CO and TSP concentrations tend to reflect local emission sources; that is, concentrations are highest at the source and decrease rapidly as the pollutants are dispersed by wind. In contrast, ozone is not directly emitted but is a secondary pollutant formed in the atmosphere by a complex series of photochemical reactions involving reactive hydrocarbons and nitrogen oxides. Ozone air pollution is thus a regional phenomenon because the precursor pollutants are carried downwind as the photochemical reaction occurs.

The Bay Area Air Quality Management District (BAAQMD) operates an air quality monitoring station about two miles south-southeast of the site at 900 23rd Street. A three-year summary of the data collected and the corresponding ambient air quality standards are shown in Appendix E, page A-49. These data show occasional excesses of the CO and TSP standards. In 1982, the eight-hour standard for CO was exceeded once and the 24-hour TSP standard exceeded three times. The one-hour CO standard was never exceeded. (A more stringent one-hour CO standard went into effect January 15, 1983.) The only air pollutant to exceed standards in 1980 and 1981 was TSP; the 24-hour standard was exceeded six times in 1980 and once in 1981.

A special monitoring program, called a Hotspot program, was conducted at 100 Harrison Street during the winter of 1980-81, approximately one mile east of the proposed project. The observed high eight-hour average concentration was 7.8 parts per million (ppm), which is 1.2 ppm less than the applicable air quality standard of 9 ppm.[1] The highest 1-hour average concentration was 13 ppm, which is 7 ppm lower than the applicable state standard. In 1982, a street level average CO maximum of 14.5 ppm was measured at the street level monitoring station at 939 Ellis Street near Van Ness Avenue about a mile west-northwest of the proposed project. This data indicates that some locations in San

Francisco, particularly those near high traffic volumes and congested traffic flow, may experience violations of CO standards under adverse meteorological conditions.

Highest annual pollutant concentrations in San Francisco, while exhibiting fluctuations due to variations in meteorology, have shown an overall improvement during the 1971-1982 period. No similar trend in the annual number of violations of standards is evident, although such occurrences are infrequent (six a year or fewer).

In 1979, emissions from motor vehicles were the source of 94% of the CO, 36% of the hydrocarbons (HC) 7% of the TSP, and 44% of the nitrogen oxides (NO_x) in San Francisco, while power plant fuel combustion was the largest single source of sulfur oxides, about 33% of the total. These percentages are expected to apply reasonably well to current conditions.[2]

The nine-county San Francisco Bay Area air basin is designated by the California Air Resources Board (CARB) as a nonattainment area for O_3, CO and TSP. (Nonattainment means the federal ambient air quality standards for these pollutants have been violated within the past two to three years.) As required by the Federal Clean Air Act Amendments of 1977, a regional Air Quality Plan has been adopted for the Bay Area that establishes control strategies to attain federal and state standards by 1987.[3] Air quality control strategies include stationary and mobile source emission controls and transportation improvements to be implemented by the Bay Area Air Quality Management District (BAAQMD), Metropolitan Transportation Commission (MTC), and the CARB.

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[1] Association of Bay Area Governments, AQMP Tech Memo 40, "Results of the 1980/1981 Hotspot Monitoring Program for Carbon Monoxide," Berkeley, California, January 1982.

[2] Bay Area Air Quality Management District, Base Year 1979 Emissions Inventory, Summary Report (Revised), San Francisco, California, July 1, 1982.

[3] Association of Bay Area Governments (ABAG), BAAQMD and MTC, 1982 Bay Area Air Quality Plan, Berkeley, California, December 1982.

C. ENERGY

Pacific Gas and Electric Company supplies energy to San Francisco customers. Electrical energy is generated from various sources of energy including oil, gas, hydroelectric, geothermal, nuclear, wind, cogeneration and solid waste.[1] In future years PG&E expects to generate electricity from these sources and from coal.

The proportion of energy from oil and gas is expected to decrease by 1990 with corresponding increases in the proportion of energy from the other sources listed above.[2]

Existing annual energy use at the site is about 80 kwh of electricity for one elevator and lighting, water pump and security systems.[3]

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[1] Pacific Gas and Electric Company, 1982 Annual Report, San Francisco, California 1982.

[2] Pacific Gas and Electric Company, 1981 Annual Report, San Francisco, California 1981.

[3] Don M. Franklin, Customer Services Supervisor, Pacific Gas and Electric Company, San Francisco, California, letter dated September 19, 1983.

D. HOUSING

1. Housing Supply

According to the 1980 census, there are about 316,000 housing units in San Francisco. About two-thirds of the stock is rented and one-third is owner-occupied.[1] Housing production in the City (as measured by building permits issued) has been predominantly multi-family housing. Between 1978 and 1980, 84% to 87% of residential building permits were for multi-family housing and in 1981 that figure increased to 95%.[2]

The nature of the multi-family housing stock (including townhouses, condominiums and apartments) in the City is changing because of conversion of rental units to condominiums and conversion of residential hotels to other uses. Under the Subdivision Code as revised in 1982, the City allows conversion of 200 units of rental housing to condominiums per year. In 1981, about 40% of rental units converted to condominiums were estimated to be owner-occupied.[3] It is further estimated that from 1975 to 1980, approximately 3,700 residential hotel units were demolished or converted to commercial or tourist uses.[4] The demolition and conversion of residential hotel units are regulated by Chapter 41 of the San Francisco Administrative Code, as amended.

Several factors indicate that housing demand in San Francisco has heightened over the past decade. The number of households increased by 1.3% from 1970 to 1980 despite a 5.6% decrease in total population. This reflects a decrease in the size of households in San Francisco from 2.34 persons to 2.19 persons, which is a trend typical of many areas during this time.[5] Although the number of housing units in the City increased by 1.9% over this period, by 1980 the vacancy rate, which indicates the balance between housing supply and demand, remained low at 0.56% for owner-occupied housing and 2.68% for rental housing.[6]

The average market value of a single-family house in the Bay Area was about $143,000 in 1983; the 1983 average in San Francisco was about $156,000. San Francisco experienced the greatest[7] increase in average market value of all Bay Area cities over the past five years. In 1980 the median contract rent was $267[8], which in 1983 dollars would amount to more than $375.

The percentage of San Francisco's employed population that works in the City has decreased from more than 80% in 1970 to 75% in 1980. This suggests that fewer people who work in the City also are living here. However, the number of San Francisco residents working in the Financial, Insurance and Real Estate (FIRE) sector increased during this period (1970 to 1980) by more than 6,000. This represents about one-third of the total increase in employment in the City FIRE occupations.[9] The Department of City Planning projects that as many as 40% of office workers would desire to live in San Francisco if they work in the City.

The expansion of downtown office space is a source of pressure on San Francisco's housing demand, together with the above-noted decrease in household size; increased land, labor and materials costs; immigration from abroad; high interest rates; and limited land for housing. There are also regional housing impacts. There were just over two million housing units in the nine-county Bay Area in 1980. About one-third of the units are in the East Bay (Alameda and Contra Costa counties), about one-third on the Peninsula (San Mateo and Santa Clara counties), about 16% in San Francisco, 10% in the North Bay (Marin and Sonoma counties) and 6% in Solano and Napa counties.[10]

The limited information available on housing production in the Bay Area counties suggests that the markets have been depressed in recent years. Regionally, single-family permits declined in 1979, 1980 and 1981. Alameda, Contra Costa, San Francisco, San Mateo and Sonoma county single-family permit issuances rose from 1978 to 1979, but then declined in 1980. Regional multi-family rental unit permits have declined every year between 1977 and 1981. Conversely, condominium permits increased between 1977 and 1980 and decreased in 1981.[11] The housing recovery trend in the Bay Area during the fourth quarter of 1983 showed a gain of 99% over the level reported during the fourth quarter of 1982 for total permits issued.[12]

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[1] U.S. Bureau of the Census, 1980 Census Information, File STF 1-A, Report #4, March 1982, Tables 25 and 26.

[2] ABAG, San Francisco Bay Area Housing Activity Report, No. 4, May 1982, page 21.

[3] San Francisco Department of City Planning, Condominium Research, Preliminary Progress Report, December 1981.

[4]San Francisco Department of City Planning, A Study of the Conversion and Demolition of Residential Hotel Units, December 1980, page 17.

[5]Department of City Planning, Statistical Update on Citywide Office Development, May 1, 1981.

[6]U.S. Bureau of the Census, 1980 Census Information, File STF 1-A, Report #4, March 1982, Tables 25 and 26.

[7]Data Provided in Northern California Real Estate Report, Volume 34, Number 3, Real Estate Research Council of Northern California, update per telephone conversation with James Davis, Executive Director, February 24, 1984.

[8]City and County of San Francisco, 1980 Census Information, File STF1-A, Report #4-Housing, Table 44, Marck 1982. Escalation to 1982 dollars based on a 15.4% increase in the Consumer Price Index."

[9]U.S. Bureau of the Census, Population Census 1970 and 1980, and County Business Patterns 1970 and 1980.

[10]Real Estate Research Council of Northern California, Northern California Real Estate Report, Vol. 33, No. 1, April 1981. Updated to October 1982 per James Davis, Executive Director, telephone conversation, December 28, 1982.

[11]ABAG, San Francisco Bay Area Housing Activity Report, No. 4, May 1982.

[12]Real Estate Research Council of Northern California, Real Estate and Mortgage Finance Trends, No. 154, March 1, 1984.

IV. ENVIRONMENTAL IMPACTS

A. ISSUES NOT ADDRESSED

The 901 Market Project was examined in an Initial Study to identify its potential effects on the environment. Some impacts of the proposed project, cumulatively with other projects in the downtown area, could be potentially significant and are analyzed below. Certain possible environmental issues were determined to be insignificant. Other potential impacts would be mitigated through measures incorporated into the project design. These will not be addressed in the EIR: Land Use; Visual Quality; Population; Noise; Project-Related Air Quality Impacts and Impacts from Odors/Burning of Materials; Utilities and Public Services; Geology/Topography; Water; Hazards; Architectural Resources and Cultural; Employment; and Biology. A copy of the Final Initial Study is attached to this report as Appendix A, page A-1.

Not all issues covered in the EIR are physical environmental impacts as defined under the California Environmental Quality Act (CEQA). Information regarding non-physical effects are provided for informational purposes only.

B. TRANSPORTATION

1. Trip Generation and Distribution

a. Project Travel Demand

Based on City guidelines and Caltrans trip generation research, the project travel has been calculated in Table 1 (page 24).[1,2] The project would generate a total of about 11,425 person trips daily: about 1,155 during the p.m. peak hour and 2,195 during the peak two-hour period. A total of 695 outbound trips would occur during the peak hour and 1,285 trips during the peak 2-hour period. The geographical and modal distribution of project travel (Table 2, page 25) has been based upon projected modal splits for the year 2000 contained in the Draft EIR (DEIR) for the Downtown Plan (EE81.3).[3]

Future modal splits have been used to compare project travel with future travel demand on San Francisco's transportation system. The modal splits used were derived from aggregate data for the C-3 District, the zoning district containing the project site, and thus represent an average condition. The actual modal split for project travel may differ from the C-3 District average. However, because the travel demand forecasts used to derive the average modal split data include project travel, application of the average modal split data to project travel has been assumed to be sufficiently accurate for purposes of comparison.

b. Cumulative Travel Demand

Analysis in San Francisco EIRs of the transportation impacts of cumulative development has been the subject of considerable public discussion. To date, cumulative analysis has been based on a list of proposed development in the greater downtown area (see Appendix C, Table C-1, page A-38 of this report, for the March 10, 1984 list of these projects). The Downtown Plan DEIR presents a refinement of the existing process in which projections of employment growth, independent of a list of proposed projects, are used to project future travel.[4]

As discussed in Appendix J of the Downtown Plan DEIR, future implementation of planned transit service improvements is assumed. These planned improvements would allow system capacities to keep pace with demand increases. The Downtown Plan DEIR analysis also assumes that regional auto demand will continue to change, reflecting the increasing

TABLE 1

PROJECT PERSON TRIP GENERATION

Land Use (net square feet)	Daily Trip Rate	Daily Trips	Peak-Period Trips (1-hr/2-hr)	
			Total	Outbound
- 80,000 gross sq. ft. retail area (net new area)	110/1,000[1,2]	8,800	880/1,760	440/880
- 145,000 gross sq. ft. office area	18.1/1,000[3]	2,625	275/435	255/405
	NET TOTALS	11,425	1,155/2,195	695/1,285

- 8,800	daily retail trips	= 455	work trips[4]	= 8,345	non-work trips	
- 2,625	daily office trips	= 1,050	work trips[4]	= 1,575	non-work trips	
	TOTALS	1,505	work trips	9,920	non-work trips	

[1]Institute of Transportation Engineers, Trip Generation, 1979, not paginated.

[2]Caltrans, Eleventh Progress Report on Trip Ends Generation, July 1976, pages 167, 168, 171 and 174.

[3]SFDCP, Guidelines for Environmental Review, September 1983.

[4]Based upon one retail employee per 350 gross square feet and one office employee per 275 gross square feet as outlined in the City's Guidelines.

TABLE 2

PROJECT PERSON TRIP DISTRIBUTION

(Outbound During P.M. Peak Period)

Location and Mode	Peak-Period Person Trips (1-hr/2-hr) Work	Non-Work	Total
San Francisco			
Auto	40/65	10/20	50/85
Muni	60/105	35/70	95/175
BART	5/10	10/20	15/30
Walk	10/15	335/665	340/680
Other	---	---	---
	115/195	390/775	505/970
East Bay			
Auto	15/20	10/20	25/40
BART	40/60	25/50	65/110
AC	15/25	---	15/25
Other	5/10	---	5/10
	75/115	35/70	110/185
Peninsula			
Auto	20/25	10/20	30/45
BART	5/10	---	5/10
Samtrans	5/10	---	5/10
SP	5/10	---	5/10
Other	---	---	---
	35/55	10/20	45/75
North Bay			
Auto	10/15	10/20	20/35
GGT Bus	15/20	---	15/20
GGT Ferry	---	---	---
Other	---	---	---
	25/35	10/20	35/55
	250/400	445/885	695/1,285

Source: DCP, OER, Draft EIR for the Downtown Plan, EE81.3, March 16, 1984, on file at OER.

congestion on the bridges and freeways serving the City. The analysis for commuting projects a shift from single-occupant auto use (driving alone) to ridesharing (carpool, vanpool) and to transit use.

The travel data presented in the Downtown Plan DEIR transportation sections (and in this report) are projections of total demand on the transportation system serving San Francisco. The projections are comprised of three components of travel demand. Two of the components were developed through an intricate travel modeling process for the C-3 District of San Francisco. These first two components are C-3 District work (employee journey-to-work) travel and C-3 District non-work (all other) travel. The third component is non-C-3-District travel, which was forecast through an analysis of regional trends adjusted for development in the C-3 District.

Although the C-3 District modeling process used analytical techniques common to travel forecasting, several portions of the process are unique to the C-3 District. This uniqueness results from the two major data bases used: an inventory of existing land uses in the district and surveys of employees and employers in the district. The data developed from the surveys and the inventory have been used as the basis from which to make forecasts of development and employment growth in the C-3 District. The following sections of the Downtown Plan DEIR, containing detailed information about methods used to project future employment in the C-3 District, are incorporated by reference into this report: Sections IV.B., Land Use and Real Estate Development; IV.C., Business and Employment; IV.D., Residence Patterns and Housing; and Appendices G, Land Use and Real Estate Analysis; H, Business and Employment Analysis; and I, Theoretical Discussion of Housing Market Effects/Methodology for Forecasting Residence Patterns. The employment projections in the Downtown Plan DEIR for the year 2000 exceed the maximum employment projected using the current list-based cumulative analysis, because the list cannot take into account projects not yet proposed. The employment forecasts have been used as the basis for the travel demand modeling process. As previously described, the C-3 District travel comprised two of the three components of total travel. Because of the employment projections used in the travel demand modeling process, the transportation forecasts for the year 2000 are independent of cumulative development lists.

Through a complex calibration and validation process of comparing projections of travel demand (modeled on the basis of the survey of C-3 District employees) to actual travel (from measurements made by state, city and regional agencies), work and non-work travel demand from the C-3 District was modeled for the years 1984, 1990 and 2000. The modeling process is comprised of the following steps:

- Trip generation rates (empirical measures of total travel to and from a specific land use) were applied to employment forecasts by business activity (i.e., different rates were used for various land uses).
- The total travel from the C-3 District was distributed to seven Bay Area zones on the basis of projections of future employee residence patterns and origin-destination patterns for non-work travel.
- Trips to each of the seven regional zones were assigned to travel modes on the basis of modal splits (distribution of travel over the transportation modes, auto, transit, etc.) developed from the C-3 District surveys.

At this stage of the process, the model forecasts total travel from the C-3 District. To complete the process and allow analysis of the effect of C-3 District travel demand on the transportation network, the non-C-3 travel demand was analyzed. The total travel demand was calculated by summing up C-3 District work and non-work travel and non-C-3 travel at sub-regional measuring points (called screenlines) located at or just beyond the San Francisco county line (except for Muni and BART Peninsula service which was measured inside San Francisco, outside the downtown). The total travel demand was then compared to available service (capacity) at the screenlines and operating conditions (demand-to-capacity ratios) were analyzed assuming planned improvements. The results of these analyses are summarized later in this section.

For future years, the C-3 travel modeling process was modified to incorporate changes in travel patterns (modal split changes, different travel times), employee residence patterns and land use patterns. The process incorporates the dynamic aspects of changing Bay Area travel patterns, rather than remaining static over time. An example of past changes in travel patterns can be seen in the amount of carpooling activity on the Bay Bridge. In 1977, peak-period average vehicle occupancy westbound on the bridge was 1.7 persons per vehicle. By 1983, in response to increasing congestion and increased travel and parking costs, peak-period average vehicle occupancy westbound increased to 2.1 persons per vehicle.[5] The non-C-3 travel demand was forecast through the use of growth factor trends in regional and sub-regional travel.[6]

The other process used to forecast cumulative transportation impacts starts with a list of cumulative office and retail development (net new office and retail space) proposed, approved or under construction in the greater downtown area. From that list, using static employment densities for office and retail uses and established trip generation rates, forecasts of travel demand are made. The forecast travel is assigned to modes on the basis of static modal split factors (not assumed to change over time). The Guidelines for Environmental Review: Transportation Impacts (Department of City Planning, 1983, hereinafter called "Guidelines") describe the process and the data used to calculate transportation impacts from the list-based development.

The latest list, shown in Appendix C, has about 19 million gross square feet (gsf) of net new office space and about 0.9 million gsf of net new retail space. On the basis of the Guidelines analysis, the list-based development would generate approximately 80,000 p.m. peak-period person trips, about 49,000 of which would occur in the p.m. peak hour. Table 3, page 29 compares projections of year 2000 travel demand from the list-based analysis and the Downtown Plan DEIR. Because the list contains development outside the C-3 District and the Downtown Plan DEIR makes specific projections for C-3 District development only, the travel components shown in Table 3 are for the C-3 District only. Travel from the C-3 component of the list (about 13 million gsf of net new office space and 0.4 million gsf of retail space) has been compared with the projections from the Downtown Plan DEIR for Alternatives 1 to 5 and the Downtown Plan. As shown in Table 3, travel demand from the Alternatives in the Downtown Plan EIR ranges from Alternative 1 (about 17% higher than the Downtown Plan) to Alternative 4 (about 5% lower than the Plan). Although there is a range, the spread is within the level of accuracy of the transportation analysis $\pm$ 10%), and thus, statistically, the transportation impacts of the Alternatives are equivalent to those of the Downtown Plan.

Several anomalies are apparent in the data shown in Table 3. While the list's C-3 component generates about half as much travel as do the Downtown Plan and the five Alternatives, the list-based analysis generates travel demands within San Francisco that exceed those generated by the Downtown Plan and the Alternatives. Total travel amounts differ because the list has a different time frame than the Downtown Plan DEIR. The Downtown Plan DEIR established 1984 as the baseline year and 1990 and 2000 as target study years. Growth estimates were made on the basis of projections for each of the target years for the range of alternatives. The projects included on the cumulative list

TABLE 3

COMPARISON OF OUTBOUND P.M. PEAK-HOUR CUMULATIVE TRAVEL DEMAND FOR THE C-3 DISTRICT - PERSON TRIPS

	March 10, 1984 Cum. Dev. List[1]	Downtown Plan (1984-2000)[2]	Alternative 1 (1984-2000)[2]	Alternative 2 (1984-2000)[2]	Alternative 3 (1984-2000)[2]	Alternative 4 (1984-2000)[2]	Alternative 5 (1984-2000)[2]
Work Person Trips	22,100	41,400	47,600	46,200	44,400	39,100	39,700
Other Person Trips	8,200	12,100	14,700	14,200	13,400	11,800	11,800
Total Person Trips	30,300	53,500	62,500	60,500	57,900	51,000	51,600
Muni							
Northeast	900	1,600	1,700	1,600	1,600	1,700	1,700
Northwest	3,700	1,800	2,000	1,900	1,800	1,800	1,800
Southwest	3,100	1,100	1,100	1,000	900	800	800
Southeast	600	1,100	1,000	1,000	1,000	600	700
BART							
East Bay	4,500	11,800	13,300	13,100	12,700	11,300	11,300
Peninsula	1,900	2,400	2,800	2,700	2,600	2,300	2,300
AC Transit	1,700	200	600	500	300	-100	-100
GGT							
Bus	1,100	3,200	3,700	3,600	3,500	2,700	3,100
Ferry	300	800	800	800	800	800	800
SamTrans	300	1,200	1,300	1,300	1,200	1,000	1,100
SPRR/CalTrain	500	1,800	2,000	1,900	1,800	1,700	1,700
Regional Auto							
Golden Gate Bridge	370	410	630	590	540	390	370
Bay Bridge	960	1,250	1,550	1,540	1,510	1,060	1,110
U.S. 101	420	470	650	620	590	400	400
Interstate 280	420	470	650	620	590	400	400

[1]Travel from only those listed projects that are located inside the C-3 District. The list also contains development located in the greater downtown area outside the C-3 District; travel from those projects has been included in the list-based travel shown in the remainder of this section.

[2]Travel from the C-3 District only. The analysis used in the Downtown Plan DEIR assumes regional travel growth not shown in the above data but discussed in the remainder of this section.

Source: Environmental Science Associates, Inc.

span a period from 1984 to the early or mid-1990's, when completion of all projects on the list or a similar amount of square footage would be expected.[7] Thus, results of impact analyses using these two forecasting methods are not directly comparable.

Variations in travel by trip purpose (work, other) and travel mode between the list-based method and the Downtown Plan DEIR method can be explained by differences in the methodologies and databases used to forecast the travel demand. Variation in trip purpose data is the product of the trip generation process used. The list-based analysis uses single-use trip generation data to estimate total travel by adding up trip generation estimates from all the individual buildings on the list. Single-use trip generation rates do not incorporate any discounting factors to account for trips going from one building to another within the Downtown. Studies for the Downtown Plan DEIR have confirmed that there is considerable travel between land uses in the downtown area. The list-based analysis adds every trip as if it were a new trip in or out of the downtown.

The Downtown Plan DEIR travel demand model has refined the trip generation process by incorporating discounting factors that adjust the trip generation rates to give travel to and from the C-3 District as a whole; it does not include trips internal to the C-3 District. Thus, while the Downtown Plan Draft EIR process predicts proportionately more work travel than the list-based analysis, the DEIR forecasts more closely resemble actual travel demand from downtown development.

Different travel mode distributions are caused by refinements in the regional distribution and modal split analyses in the Downtown Plan DEIR process. The list-based analysis assumes a static (unchanging over time) regional distribution and static modal splits. The Downtown Plan DEIR analysis has incorporated changes in both the regional trip distribution (reflecting projected housing availability) and the modal splits (reflecting projected availability of roadway and transit capacity in the future).

The list-based analysis shows more San Francisco travel (as shown by larger Muni numbers for the list-based analysis in Table 3) than does the Downtown Plan DEIR because the latter analysis projects declining housing availability in the City. Thus, as the downtown work force increases, the percentage of workers living in San Francisco decreases. The list-based analysis assumes that the percentage of workers living in San Francisco remains constant over time and thus overestimates the number of future employees living in the City and underestimates the number of regional commuters.

Other modal travel differences, particularly in regional auto and AC Transit usage, result from the refined modal split process used in the Downtown Plan DEIR. The list-based analysis assumes that the modal split will remain constant over time; thus, the list-based analysis is insensitive to the abilities of transit agencies and regional roadway systems to serve future demand. The Downtown Plan DEIR analysis has assumed that the modal split would change over time to reflect the increasing congestion at the regional screenlines. Thus, because the Bay Bridge eastbound is at or near capacity in the p.m. peak hour, the Downtown Plan DEIR modal split projects proportionately less auto demand to the East Bay than does the list-based analysis. Similarly, for AC Transit, the Downtown Plan DEIR recognizes that current regional transit policy dictates no increases in AC Transit transbay service and thus, AC Transit's ability to carry additional riders transbay will be restricted in the future. The changing modal split is a refinement that allows the travel model to more accurately forecast travel demand. Thus, the Downtown Plan DEIR results represent a more accurate level of projection than has been possible to achieve using other methods and data available to date.

There are various other factors that cause differences in the travel demand projections. The Downtown Plan DEIR and the Consultant's Report on Downtown Growth Management Alternatives (Environmental Science Associates, 1983) contain extensive discussions of the analyses and data used to forecast employment, land use and transportation demand.

2. Traffic

The traffic impacts analysis has been conducted on two levels: one level of analysis considered impacts at the regional screenlines, the second considered impacts at intersections in and near the downtown.

Analysis of traffic conditions at the regional screenlines has been conducted for both the p.m. peak hour and the two-hour p.m. peak period. The a.m. peak traffic conditions at regional screenlines meter the amount of traffic that reaches the downtown from outside the City. This analysis has considered p.m. peak conditions. P.M. conditions are usually most severe on freeways and streets within San Francisco, whereas a.m. peak conditions are most severe outside the City.

Traffic demand at the regional screenlines in 1984 during the p.m. peak hour used between 90% and 100% of the available capacity on the freeways and bridges (see Table 4, page 33). Although the Bay Bridge's capacity is calculated to be 9,000 vehicles per hour (vph), the 1984 peak-hour demand shown in Table 4 represents the effective capacity. The demand figures shown in Table 4 for 1984 for the one-hour and two-hour periods are averages of several days; thus, values for individual days may be different than the average.

Peak-hour freeway operating conditions in 1984 were generally in service levels D to E conditions, which would indicate unstable flows in the 35 mph to 45 mph range. Table B-4, Appendix B, page A-28 of this report, shows the service levels for freeway operations. Peak-of-the-peak conditions within the peak hour would be expected to be worse than the hourly conditions because of surges in demand during the peak hour. Conditions during the peak period at the screenlines would be similar to those experienced during the peak hour.

As shown in Table 4, demand during the peak hour in the East Bay and Peninsula corridors would be expected to increase about 15% between 1984 and 2000. Peak-hour demand in the North Bay corridor would increase by about 6% between 1984 and 2000. The project would generate about 95 p.m. peak-hour vehicle trips and about 165 peak-period vehicle trips.[8] The project travel demand, about 95 p.m. peak-hour vehicle trips, would represent about 0.1% of the total demand in the year 2000. Both the East Bay and Peninsula corridors would have excess peak-hour demand that would not be met during the peak period. The North Bay corridor would have excess demand in the peak period. Excess auto demand would result in either a spreading of the demand into the hours around the peak period or in increased transit and ridesharing use should additional transit service (beyond that assumed to occur by the year 2000) or incentives be provided.

Operating conditions at the regional screenlines would be at or near capacity, in service level E. Traffic flow conditions would be expected to be very unstable and could experience temporary flow interruptions throughout the peak period. Peak-of-the-peak conditions would be prevalent during the peak hour and may extend into the peak period.

As shown in Table 3, the list-based cumulative analysis, while not comparable with the year 2000 data, produces similar estimates of future demand. The results reflect the tendency of the list-based method to overestimate regional auto travel.

TABLE 4

OUTBOUND REGIONAL AUTO DEMAND

Regional Auto Corridor	Capacity	1984 Demand	DOWNTOWN PLAN (2000) Demand	DOWNTOWN PLAN (2000) Project Percent	1984 + CUMULATIVE LIST Demand	1984 + CUMULATIVE LIST Project Percent
Peak Hour						
Bay Bridge (I-80)	9,000	8,540	9,790	0.1	9,480	0.1
Golden Gate Bridge (US-101)	7,200	6,740	7,150	0.1	7,100	0.1
U.S. 101 (south of Harney Way)	8,000	7,390	8,400	0.1	7,800	0.1
I-280 (between Alemany Blvd. and San Jose Avenue)	8,000	7,610	8,650	0.1	8,020	0.1
Peak Period						
Bay Bridge (I-80)	18,000	17,880	19,330	0.1	18,460	0.1
Golden Gate Bridge (U.S. 101)	14,400	13,870	14,850	0.1	15,380	0.1
U.S. 101 (south of Harney Way)	16,000	14,200	16,530	0.1	14,870	0.1
I-280 (between Alemany Blvd. and San Jose Avenue)	16,000	13,620	15,890	0.1	17,290	0.1

Source: Environmental Science Associates, Inc.; Environmental Impact Planning Corp.

To assess local traffic impacts, peak-hour turning movement volumes have been obtained for the intersections of Market/Fifth, Mission/Fifth, Mission/Fourth, Howard/Fourth and Howard/Fifth.[9]

As shown in Table 5 below, these intersections generally operate at stable flows characteristic of service level C or better during the peak hour (service level calculations and definitions are included as appendices). As shown in the service level calculation sheets, the service levels on Mission Street assume all of the through vehicles use the left lane; the right lane is designated for high occupancy vehicles and right turns only. It is recognized, however, that the right lanes are used illegally by through vehicles, spreading traffic flow over all lanes on Mission Street. With the spreading of traffic, the actual intersection flows at Mission/Fourth and Mission/Fifth are in the A service level range. Site access is also affected by congestion on the regional links. During the p.m. peak hour, both the I-80 freeway (eastbound) and Highway 101 (southbound) operate at jammed conditions associated with service levels E-F.[10] This congestion creates back-ups on freeway on-ramps, resulting in p.m. peak-hour service level E-F conditions at intersections (Harrison/Fourth and Bryant/Fifth) adjacent to ramps.

TABLE 5

EXISTING AND PROJECTED INTERSECTION SERVICE LEVELS

	Service Levels			
Intersection	1984	1984+ Project	Downtown Plan (2000)	1984 Cumulative List
Market/Fifth[1]	A-D	A-D	D	D
Mission/Fifth	C	C	D/E	D
Mission/Fourth	B	B	C	C
Howard/Fifth	C	C	D	C/D
Howard/Fourth	B	B	B/C	B

[1] Due to transit and pedestrian activity, this intersection sometimes experiences peak-hour congestion typical of service level D.

The project would not include parking but project vehicles would be expected to park in the vicinity. If one-fourth of the project vehicles pass through each intersection, the added vehicles would increase existing peak-hour volumes by 0.6-1.0%. The intersection service levels would not be measurably affected by this increased traffic.

Peak-hour conditions are expected to deteriorate at all intersections by the year 2000. Expanded areas of traffic congestion would disrupt surface Muni operations. If the mitigation measures for transportation are implemented, the intersection operating conditions would be improved.

As shown in Table 5, the list-based analysis would also result in service level degradation at local intersections. While similar to the results of the Downtown Plan DEIR, the list-based results are not comparable for the reasons stated previously.

3. Transit Service

The transit agencies serving downtown San Francisco carry approximately 60% of the peak-period employee work travel as well as about 20% of other peak-period travel. P.M. peak-hour and peak-period loadings on the local and regional transit routes were near capacity for some of the routes in 1984 (see Table 6, page 36). The values shown in Table 6 are sums over the peak hour and the two-hour peak period. Within the peak hour, there are periods of time when the loading ratios would be higher than for the hour (peak-of-the-peak conditions). Individual transit vehicle loadings vary on a day-to-day basis because of fluctuations in ridership (demand) and because of variations in operating conditions caused by traffic congestion, equipment availability, or system breakdowns.

The level of service concept, similar to that developed for highway operations, has been applied to both bus transit and rail transit. Passengers per seat (i.e., total passengers divided by the number of seats) has been used as the measure of effectiveness to define the various level of service ranges. Table B-3, Appendix B, page A-27 of this report, shows the relationship between service levels and passengers-per-seat ratios for bus transit systems.

During the p.m. peak hour in 1984, all of the transit agencies were operating in service level D or better with the exception of BART East Bay, where conditions were at service

TABLE 6

OUTBOUND REGIONAL TRANSIT DEMAND AND SERVICE LEVELS

Transit Agency	1984 Demand	1984 P/S[1]	1984 LOS[2]	DOWNTOWN PLAN (2000) Demand	DOWNTOWN PLAN (2000) P/S	DOWNTOWN PLAN (2000) LOS	Project Percent[3]	1984 + CUMULATIVE LIST Rounded Demand	1984 + CUMULATIVE LIST P/S	1984 + CUMULATIVE LIST LOS	Project Percent[3]
Peak Hour											
Muni											
Northeast	7,100	1.16	D	8,800	1.05	D	0.4	8,700	1.04	D	0.4
Northwest	8,200	1.26	E	10,100	1.25	D	0.3	12,900	1.59	F	0.2
Southwest	13,500	1.45	E	16,600	1.42	E	0.2	17,500	1.50	E	0.2
Southeast	5,300	1.06	D	7,400	1.01	D	0.2	6,400	0.88	C	0.2
BART											
East Bay	16,100	1.53	F	27,900	1.42	E	0.2	21,900	1.12	D	0.3
Peninsula	7,700	1.10	D	10,100	1.06	D	0.2	10,200	1.07	D	0.2
AC Transit	9,100	0.94	C	10,500	1.08	D	0.1	11,300	1.16	D	0.1
GGT Bus	5,300	1.00	C	8,500	0.91	C	0.2	6,800	0.73	B	0.2
GGT Ferry	800	0.57	B	1,500	0.38	A	--	1,100	0.28	A	--
Tiburon Ferry	200	0.40	A	300	0.60	B	--	200	0.40	A	--
SamTrans	1,900	1.12	D	3,100	1.19	D	0.2	2,300	0.88	C	0.2
CalTrain (SPRR)	3,100	0.61	B	4,900	0.79	C	0.1	3,800	0.61	B	0.1

TABLE 6 (continued)

Transit Agency	1984 Demand	1984 P/S[1]	1984 LOS[2]	DOWNTOWN PLAN (2000) Demand	DOWNTOWN PLAN (2000) P/S	DOWNTOWN PLAN (2000) LOS	Project Percent[3]	1984 + CUMULATIVE LIST Rounded Demand	1984 + CUMULATIVE LIST P/S	1984 + CUMULATIVE LIST LOS	Project Percent[3]
Peak period											
Muni											
Northeast	12,600	1.06	D	15,500	0.95	C	0.4	15,200	0.93	C	0.4
Northwest	13,100	1.13	D	15,300	1.05	D	0.3	20,600	1.41	E	0.2
Southwest	23,300	1.31	E	28,700	1.29	E	0.2	29,800	1.34	E	0.2
Southeast	9,100	1.00	C	12,100	0.88	C	0.2	11,000	0.80	C	0.2
BART											
East Bay	25,800	1.54	F	44,100	1.40	E	0.2	35,200	1.12	D	0.3
Peninsula	11,300	0.80	C	14,600	0.77	C	0.3	15,400	0.81	C	0.3
AC Transit	14,000	0.95	C	17,000	1.16	D	0.1	17,500	1.19	D	0.1
GGT Bus	7,600	0.90	C	12,200	0.81	C	0.2	10,000	0.67	B	0.2
GGT Ferry	1,000	0.56	B	1,700	0.33	A	--	1,500	0.29	A	--
Tiburon Ferry	300	0.60	B	500	1.00	C	--	400	0.80	C	--
SamTrans	2,900	1.12	D	4,500	1.15	D	0.2	3,600	0.92	C	0.3
CalTrain (SPRR)	4,500	0.68	B	6,200	0.77	C	0.2	5,500	0.68	B	0.2

[1]Passengers per Seat is the ratio of total demand to seated capacity.

[2]Level of Service is scale ranging from A to F that relates P/S ratios to passenger loading conditions on transit vehicles.

[3]The percent of demand generated by the project.

Source: Environmental Science Associates, Inc.

level F, and Muni in the northwest and southwest corridors, where operations were in service level E. Although BART is a rail transit service, its cars have a unique seating configuration. The ratio of total capacity to seated capacity for a BART car (about 1.5) is equivalent to the ratio for bus transit; thus the bus transit service level scale is applicable to BART. Service level F on BART is in the range of 1.5 to 1.8 passengers per seat. Because BART operates on a centrally controlled system, the "crush" loadings would not increase passenger loading times (as would be the case on a bus transit system) but would primarily decrease passenger comfort.

The rail transit service level scale is based on typical light rail transit systems where total capacity is about 2.0 to 2.2 times seated capacity. The rail transit service level scale would be applicable to Muni Metro. Muni Metro provides about 50% of the seated capacity to the southwest corridor. Because Metro vehicles can accommodate higher loadings (2.0 passengers per seat) than buses or trolleys (1.5 passengers per seat), the service level would be somewhat better than shown in Table 6. An exact estimate of Metro loadings is not possible without analysis of the Metro service separate from the remainder of Muni service to the southwest; such analysis would be beyond the ability of the travel demand analysis to accurately predict over time.

With regard to the Muni data presented in Table 6, the Muni routes have been aggregated on a corridor basis and thus include two-directional travel on some routes that serve the northeast and southeast corridors. The Muni numbers cannot be added over the corridors to get a total for the system. Neither can capacity be shifted from one corridor to another. For instance, capacity in the northeast corridor depends, in large part, on capacity that serves the southeast portion of the City. The 15, 19, 25, 30, 30X, 30AX, 30BX, 32, 41, 42, and 47 lines pass through the downtown in two directions. Service on the above lines is interdependent. Thus, increases or decreases in capacity on one of the above lines directly affects service in the opposite direction. Service to the northeast and northwest corridors is also interconnected as lines serving the northwest must pass through the northeast corridor and, thus, serve both areas. Muni ridership and capacity have been apportioned between both areas.

Passengers-per-seat ratios are only one measure of service adequacy. The obvious constraints of operating on heavily used streets in and around the downtown cause transit vehicle bunching, loss of running time and lack of schedule adherence, which inevitably

reduces service, reliability, and ultimately, capacity. In some respects this would not be evident from simple quantitative analysis. In addition to these inherent inefficiencies, there are other factors that would affect overall transit capacities. They include extreme variability in daily and seasonal ridership for which absolute capacity must be available, as well as transit riders who remain uncounted because their transit trips both start and end within the screenlines used in this analysis. Daily fluctuations in fleet availability also affect system capacity.

Further, policy considerations dictate operating conditions on certain lines where minimum headways have been established to maintain transit service to areas where service is not warranted on the basis of ridership alone. When averaged together, the ridership data from these lines may slightly distort overall ridership conditions.

P.M. peak-period conditions on transit in 1984 are equivalent to or better than peak-hour conditions. In some cases, where demand remains at peak-hour levels during the two-hour period, the passengers-per-seat ratios in the two-hour period are higher than in the one-hour period. This anomaly is the result of transit agencies providing express (or additional) service during the peak hour but not during the entire peak period. An example of this type of operation may be seen on BART, where three extra trains operate transbay in the peak hour but not in the rest of the peak period. Another factor involved is the distribution of demand (ridership) at uniformly high levels over the peak period.

Both transit demand and capacity have been assumed to increase between 1984 and 2000. The discussion of transit capacity increases for each agency are based on the Five-Year Plans and Capital Improvement Plans of the various transit agencies and are discussed in Appendix J of the Downtown Plan DEIR, pages J.25-J.26. This material, which is discussed below and summarized in Table 6, is incorporated by reference.

Future transit demand and loadings for the Downtown Plan in the year 2000 and for 1984 plus the cumulative list are shown in Table 6 for both the peak hour and the peak period. The transit demand from the project would range between 0.1%-0.4% of the total travel demand on the individual transit agencies in the year 2000. Peak-hour transit demand on Muni in the year 2000 would increase about 25% over 1984 levels in the northeast, northwest and southwest corridors. Muni demand in the southeast corridor would increase about 40% between 1984 and 2000. Peak-hour demand on the other agencies would increase between 30% and 70% between 1984 and 2000.

Peak-period increases in demand would be between 15% and 70% during the 1984 to 2000 period. Overall peak-period travel would be expected to increase about 30% between 1984 and 2000. Peak-hour and peak-period passenger loadings would be worse than in 1984, although most systems would operate in acceptable conditions (service level D or better). However, BART East Bay and Muni southwest would be in service level E during the peak hour and the peak period.

Although the data in Table 6 are calculated on the basis of projections for the Downtown Plan, similar conditions would be expected under the five Alternatives in the Downtown Plan Draft EIR. As shown in Table 3, total transit demand under Alternative 1 would be about 12% higher than under the Downtown Plan while transit demand from Alternative 4 would be about 9% lower than the Plan.

It is important to note that the Five-Year Plan improvements for the transit system are designed to not only provide for future demand increases, but also to improve service levels from existing conditions. In order for new vehicle acquisitions to represent expansion of system capacity and not simple replacement, operating revenues would similarly need to be increased. During the year 2000 peak hour, Muni southwest and BART East Bay service would exceed the desirable passengers-per-seat ratios of 1.25 and 1.30, respectively.[11] Although transit demand in the two corridors in excess of the desirable loadings would be accommodated under crowded conditions and thus would not constitute excess demand, demand in excess of the desirable loadings would mean that additional transit service over that assumed to occur by 2000 would need to be provided to allow transit operations in the two corridors to meet the goals set by Muni and BART. To meet the goal of 1.25 passengers per seat in the peak hour, Muni would have to increase service by about 14% in the southwest corridor over the amount of service assumed to occur in 2000. To meet the goal of 1.30 passengers per seat, BART would have to provide an East Bay service increase of 14% over the amount of service assumed to occur by 2000.

If transit service were not increased beyond the amounts assumed to occur by the year 2000, transit operations (in terms of passenger comfort) would be slightly better than 1984 conditions. Peak-hour and peak-period passengers-per-seat ratios would be lower than 1984 ratios even though service (in some corridors) has been assumed to increase as much as 80% between 1984 and 2000.

Alternatively, if the Downtown Plan's goals regarding increased transit use are achieved, and the proposals in the Plan regarding transit service improvements were to be fully developed and in place, the impacts on transit agencies would be less than described above. If the goals were achieved, transit agencies would experience greater levels of demand than under this analysis but overall passenger loadings would be lower (and within desirable levels) because of increased transit service availability that would come about if the proposals stated in the Plan are developed.

Also shown in Table 6 is an analysis of the conditions that would result from adding travel from the cumulative list to the 1984 base data, as specified in the Guidelines. While not specifically comparable, estimates calculated by adding the travel from the cumulative list to the 1984 base data produce similar results to those from the Downtown Plan, although the overestimation of San Francisco travel is present in the list-based results, as explained above.

4. Parking

The project's parking demand has been calculated on the basis of trip generation and modal split data. Based upon the project's travel patterns, parking demand would be about 170 spaces, calculated as follows:

- 1,505 daily work trips x 22% auto/1.6 persons per auto[2,12]/2 one-way trips per auto = 103 long-term parking spaces.
- 9,920 daily non-work trips x 10% auto[2]/1.3 persons per auto[2,12]/2 one-way trips per auto/5.5 turnovers daily[13] = 69 short-term parking spaces.

Within an approximate one-quarter mile walking distance (2-3 blocks) of the site, there are 49 off-street parking garages and lots containing about 10,640 spaces.[14] The various lots and garages are about 90% filled. The project's parking demand would increase occupancy about 1.5% in the area surveyed.

Although overall parking occupancy in the project area is high, parking is available in close proximity to the site. The existing garage at 5th/Mission (operated by the San Francisco Parking Authority) is about 65% occupied: 1,170 spaces occupied and 630 spaces vacant. The City is considering modification and expansion of this facility, which would result in a net increase of 300 spaces. The City will also be opening a 700-space

garage on Third Street near Howard. These garages would provide ample capacity for the project's parking demand and the cumulative demand of the proposed 5th/Market project on the east side of Fifth Street.

The project would be within the "Downtown Core Automobile Control Area" as designated in the City's Master Plan.[15] The project would respond to the policy by not providing additional parking.

The estimated parking demand (both long-term and short-term) from the C-3 District in 1984 was about 45,300 spaces, which would occupy about 94% of the 48,000 parking spaces in and near the C-3 District.[16] The short-term parking demand, while representing about 25% of the equivalent daily demand, is about 65% of the daily vehicle travel. Although the equivalent daily demand would leave about 10% of the parking supply vacant, surges in short-term demand (more travel in one period than in another period) can cause temporary localized overloads of parking facilities within various portions of the downtown, even though parking may be available elsewhere in the downtown.

The C-3 District would generate demand for approximately 58,000 equivalent daily parking spaces in the year 2000 under the Downtown Plan, an increase of 28% from 1984. Short-term demand would continue to represent about 25% of the total demand. The project parking demand would represent less than 0.3% of the total demand from the C-3 District. The parking supply has been assumed to be about 51,000 spaces. There would be a parking deficit of about 6,000 spaces in the year 2000 if vehicular demand occurs as projected. However, as shown in Table 6, the analysis for the year 2000 forecasts excess auto demand in the peak hour and the peak period. If the excess demand is accommodated on transit or ridesharing, then the overall parking demand would decrease from the above estimate by about 2,300 spaces.

Alternatively, if the goals of the Downtown Plan are met, total parking demand in the year 2000 would be about 48,100 equivalent daily spaces, an increase of six percent over 1984. If the goals were achieved, there would not be a parking deficit.

The list-based analysis shows future demand for 11,400 spaces from projects in the C-3 District, which would generate a total demand for 56,700 spaces. While similar to the 58,000-space (unmitigated) demand from the Downtown Plan, the list-based demand is not

comparable for the reasons stated above, particularly because the list-based analysis assumes a static modal split and thus overestimates future auto demand.

The project's freight loading needs have been calculated according to City guidelines.[17] The project's freight loading demand would be:

o	80,000 gsf retail area @ 0.21 spaces/10,000	=	1.68	spaces
o	145,000 gsf office area @ 0.1 space/10,000	=	1.45	spaces
	TOTAL	=	3	spaces

The project would include three loading docks along the site's Stevenson Street frontage.

5. Pedestrian Flows

The project's main pedestrian access would be located on Market Street. The project would generate about 1,150 p.m. peak-hour pedestrian trips (assuming all of the project's person trips involve walking to transit stops or parking facilities) and 1,230 pedestrian trips during the mid-day peak hour (within the 11:00 a.m. to 1:00 p.m. period).

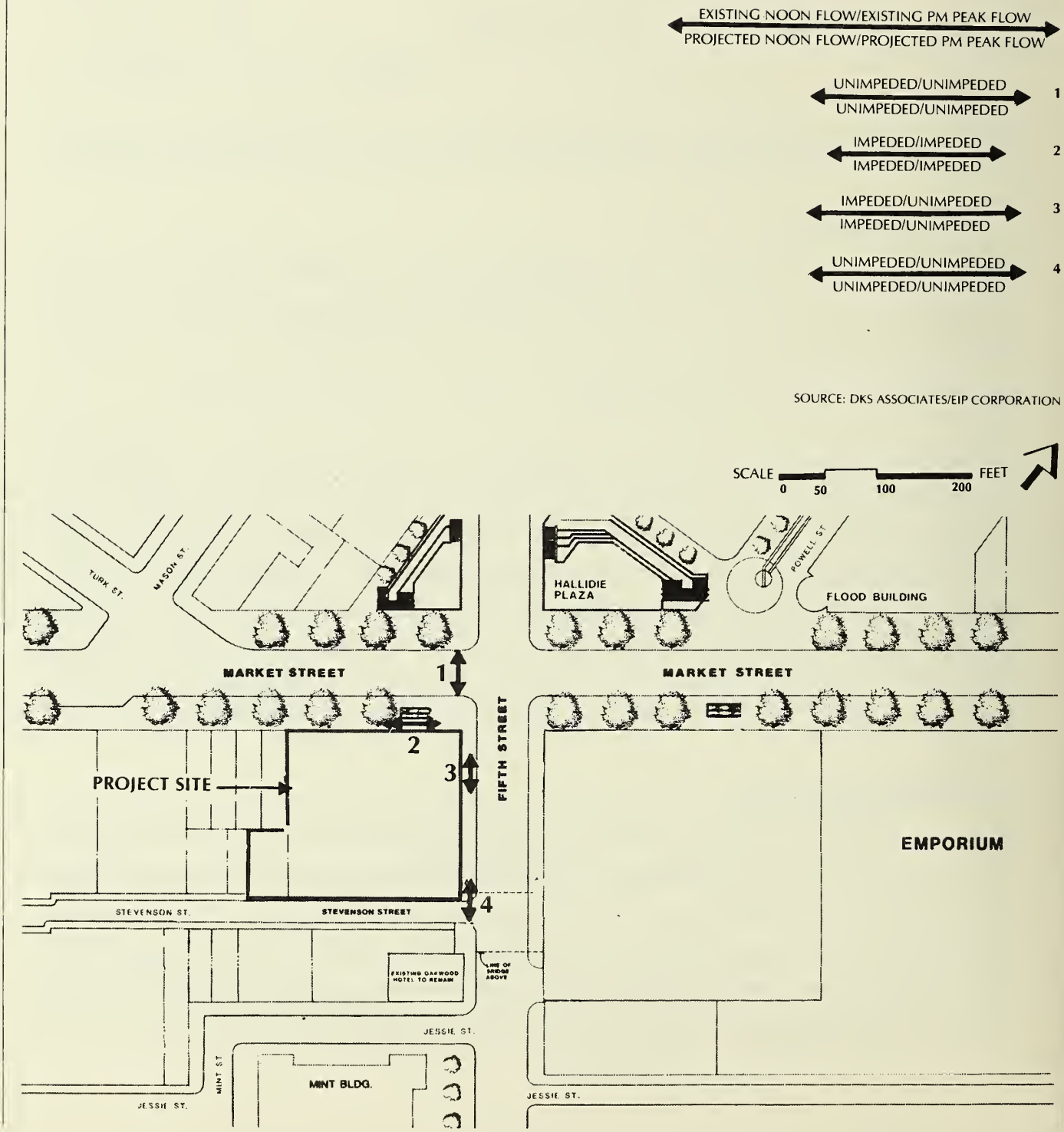
Existing and projected pedestrian flow conditions have been identified for sidewalks and crosswalks adjacent to the project site (Appendix B, Table B-1, page A-24).[18] The projected flows (to the year 2000) reflect pedestrian travel to/from the proposed project as well as the cumulative effects of other development in the area (including the proposed Fifth and Market development on the southeast corner of Fifth/Market immediately across Fifth Street from the proposed project). As shown in Figure 8 (page 44), pedestrian flows would remain at their current levels. The project's pedestrian travel would represent about 10-20% of the pedestrian flows projected for the year 2000.

6. Construction Impacts

The project would be constructed over an approximately 12-month period, employing 100-150 employees at any one time during construction.[19] If construction employees exhibit the same travel characteristics as other downtown employees, up to 20-30 auto trips would be generated during the p.m. peak hour. These trips would not change traffic service levels on the adjacent street network. The 20-30 construction employees' vehicles could be accommodated in existing parking lots and garages in the project area.

EXISTING AND PROJECTED PEDESTRIAN FLOW REGIMES

FIGURE 8



It would be tenuous to predict specific truck activity associated with the project construction. If an average of 25 trucks visit the site daily this truck activity would add less than 0.2 percent to flows on adjacent streets and the traffic flow characteristics would not degrade as a result of the truck travel. During construction, trucks could queue on Market and Fifth Streets and these backups would temporarily disrupt through traffic. Since this project involves rehabilitation rather than new construction, the construction impacts would be considerably less than that created by new construction. The cumulative effects of the proposed Fifth/Market project could be closure or disruption of the curb lanes on both sides of Fifth Street. If this occurs, the Fifth/Market intersection would degrade to service level D-E. Because construction activity typically ends prior to the p.m. peak period (4:00 p.m. to 6:00 p.m.), this activity would not be expected to affect peak traffic flows.

Immediately adjacent to the site, pedestrian flows are heavy along Market Street.[18] To the extent that construction activity would encroach onto sidewalk areas pedestrian flows could be disrupted for approximately two months. A portion of the sidewalk could be displaced and pedestrians routed to a covered pedestrian walkway. Pedestrian flow quality would remain unchanged, assuming a minimum width of six feet could be provided along the temporary walkway. Along Fifth Street, cumulative effects of the proposed Fifth/Market project could result in closure (full or partial) of sidewalks. The combined pedestrian flows (along both the west and east sides of Fifth Street) would require a temporary walkway of eight feet (to maintain existing flow quality).

7. Costs

Cost increases due to increased patronage would be expected for Muni, SamTrans, BART, and Golden Gate Transit. The City's general fund provides for a subsidy to the Municipal Railway's operating budget. The subsidy covers the difference between Muni's costs and the revenues that Muni receives from fares and from federal and state governments and represents the cost of Muni to the City. The net marginal cost (the increase in the deficit for Muni operations) per peak-period ride was $0.39 in 1982.[20] The proposed project would generate about 350 a.m. and p.m. peak-period trips, which could generate an annual deficit increment of $35,490 to Muni based on the marginal cost data provided by Muni.[20] This deficit could be greater because the Muni deficit-per-passenger-trip figure is based on 1980-81 data, the marginal cost is based on all rides and not peak-period rides, and the

total project-related deficit is calculated for only those riders who would use Muni as their primary mode of transportation, excluding riders who would use a combination of transportation modes, such as Muni and Southern Pacific. The extent to which this cost would be met by the general fund allocation to Muni is not known. State and federal funds to Muni are decreasing, and the City is reviewing other options for increased revenues.[21]

On April 27, 1981, the San Francisco Board of Supervisors approved Ordinance 224-81 to assess new downtown commercial development to support Muni. The plan calls for a one-time fee of up to $5.00 per gross square foot upon construction of new downtown office space. The ordinance, currently in litigation, would contribute funds for operating costs and capital improvements for Muni transit services. Based on this ordinance, the project could generate up to about $630,000 in one-time fee revenues to Muni. About $2,257,635[22] has been collected to date from other projects. About $34 to $40 million could be collected in the next five to six years. There are no specific plans at this time for use of the fee revenues.

According to a memorandum entitled "Muni's Plans to Accommodate Downtown Growth" issued by Dean Macris, Director of Planning, August 5, 1982, Muni expects to be able to meet projected cumulative demand due to downtown office development without new City taxes.

It is estimated that 300 combined a.m. and p.m. peak-period trips a day on BART would be generated by the proposed office project employees. The operating deficit per rider for BART is estimated at $1.06.[23] At this rate, the proposed project would generate an annual deficit of about $82,680. These deficits are expected to decrease in real dollars over the years.

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[1]San Francisco Department of City Planning, Guidelines for Environmental Review (Transportation Impacts), July 1983.

[2]Caltrans, Tenth Progress Report on Trip Ends Generation, July 1975.

[3]San Francisco Department of City Planning, Office of Environmental Review, Draft Environmental Impact Report for The Downtown Plan, EE81.3, March 16, 1984. This document is an analysis of projected growth in the C-3 District to the year 2000 under

the Downtown Plan and five alternatives. The transportation analysis in the DEIR includes projections of future modal splits for work and non-work travel for the p.m. peak period, peak hour and daily time periods. This document is on file and available for public review at the Office of Environmental Review, 450 McAllister Street, Fifth Floor.

[4]The Downtown Plan EIR contains about 50 pages of text devoted to the description of transportation impacts in the greater downtown area, as well as an additional 30 pages of text describing transportation mitigation measures. The information in this Draft EIR is not intended to be a comprehensive summary of the transportation analysis in the Downtown Plan DEIR, but summarizes portions relevant to the proposed project and its contribution to cumulative impacts. For details and assumptions used to arrive at the data and results presented in the Downtown Plan DEIR, see Sections IV.E, Transportation Setting and Impact, and V.E, Transportation Mitigation, of the Downtown Plan Draft EIR, which are incorporated by reference into this report and summarized in the text as appropriate.

[5]Metropolitan Transportation Commission, Traffic Survey Series A-48 and MA-60, Spring 1977 and Spring 1983.

[6]The analysis of historic trends in travel patterns is from the following sources: Metropolitan Transportation Commission, Travel Observations of the Bay Bridge Corridor, October 21, 1981; Homburger and Dock, Trends in Traffic Patterns at the Bay Bridge and Caldecott Tunnel, U.S. Department of Transportation, DOT-BIP-WP-32-3-77, July 1977; telephone survey of 500 drivers conducted in April 1980 by Golden Gate Transit, data supplied by Alan Zahradnik, Transportation Planner, on February 16, 1983; Office of the Auditor-Comptroller, Comparative Record of Traffic for the Month of November, May 27, 1937 through November 30, 1982, Golden Gate Bridge, Highway and Transportation District; San Francisco Municipal Railway Planning Division, Projections of Future Muni Demand and Vehicle Requirements, October 1982; San Mateo County Transit District, SamTrans Five-Year Transportation Development Plan: 1983-1988, April 1983; California Department of Transportation, CalTrain Caltrans/Southern Pacific Peninsula Train Service Five-Year Plan 1983-1988, July 1983; and traffic volume counts from Department of Public Works, Bureau of Engineering, Division of Traffic Engineering and from 1983 San Francisco Cordon Count, JHK and Associates, July 1983.

[7]See Downtown Plan DEIR, pages II.9-II.11 for a comparison of the cumulative list projections with those of the Downtown Plan DEIR.

[8]JHK and Associates, 1983 San Francisco Cordon Count, July 1983. The Cordon Count collected data for persons and vehicles entering and leaving the Metropolitan Traffic District (MTD). The MTD roughly corresponds to District 15 shown on Figure II.C.2. of the Downtown EIR Consultant's Report. The 1983 Cordon Count found an overall vehicle occupancy of 1.40 persons per vehicle in the downtown area.

[9]Counts conducted by EIP Corp. May 2 and 3, 1984.

[10]Scott MacCalden, Senior Engineer, Highway Operation Branch, Caltrans, telephone conversation December 28, 1981.

[11]San Francisco Municipal Railway, Short-Range Transit Plan 1983-1988, July 1983. Bay Area Rapid Transit District, Short Range Transit Plan for the Five-Year Period July 1983 Through June 1988, August 1983.

[12]San Francisco Department of Public Works, 1983: Downtown Cordon Count, 1983.

[13]ESA, Access Survey of the Sutter Stockton Garage, June 10, 1983.

[14]Field Review by DKS Associates on August 25, 1982.

[15]S. F. City Planning Commission, Revisions to the Transportation Element of the Master Plan Regarding Parking, adopted by Resolution 7647 on January 20, 1977.

[16]The parking survey data and other supporting calculations and data used in the transportation impact analysis are on file and available for public review at the Office of Environmental Review, Department of City Planning, 450 McAllister Street, Fifth Floor.

[17]Guidelines adopted by San Francisco Planning Commission on January 21, 1982, described in Resolution No. 9286; guidelines based on findings in the San Francisco Center City Pedestrian Circulation and Goods Movement Study, September 1980, Wilbur Smith and Associates.

[18]Field Review by DKS Associates on September 9, 1982.

[19]Estimate by George W. Nickelson, EIP traffic engineer, based upon project construction costs.

[20]Bruce Bernhard, "The Marginal Cost of Peak Muni Passenger Trips per Unit of Office Space," San Francisco Public Utilities Commission, February 1981. 716 x $.39 x 260 working days a year = $72,600.

[21]Bruce Bernhard, San Francisco Public Utilities Commission, conversation, January 18, 1982.

[22]Frances Nye, Transit Impact Fee Coordinator, San Francisco Public Utilities Commission, telephone conversation, February 24, 1984.

[23]Sy Monker, Planner, BART, telephone conversation, October 4, 1983. Updated by telephone conversation with Ward Belding, Supervisor of Office of Research, Bay Area Rapid Transit District, April 17, 1984.

C. AIR QUALITY

Upon completion, the project would affect air quality in two ways: emissions would be generated by project-related traffic and by combustion of natural gas for space and water heating. Transportation sources would account for over 95% of project-related emissions.

Direct atmospheric emissions from the operation of the proposed project would result from the combustion of natural gas on-site for water and space heating. Natural gas is a relatively clean-burning fuel; therefore, no visible plume would occur. Exhaust gases would be emitted at rooftop level and would be diluted to concentrations well below the ambient air quality standards before reaching ground level. Projected daily emissions of pollutants in 1990 from project-generated traffic, and from cumulative development traffic, based on the March 10, 1984 list of Cumulative Office Development in Downtown San Francisco (Appendix C, Table C-1, pages A-38 to A-42, are shown in Table 7 (page 50 of this report). These emissions are also compared in the table to emissions projected for C-3 District development by the Downtown Plan Draft EIR, and to total emissions projected for the entire Bay Area by the 1982 Bay Area Air Quality Plan.

Motor vehicle trips associated with downtown development would emit more nitrogen oxides (NOx) than hydrocarbons (HC), both of which are chemical precursors of ozone, while emissions from the building's natural gas combustion would consist primarily of NOx. On the basis of the Livermore Regional Air Quality Model (LIRAQ) ozone simulations conducted for the 1982 Bay Area Air Quality Plan, NOx emissions in excess of HC emissions could lead to a slight decrease in peak ozone concentrations in the Bay Area. This relationship between NOx and HC emissions would hold both under the cumulative list scenario and the Downtown Plan scenario shown in Table 8, page 51. Thus, emissions of HC and NOx generated by the project and by cumulative development would not increase the Bay Area ozone concentrations that would otherwise occur.

It is possible, however, that excess NOx emissions could increase ozone and/or nitrogenous oxidant concentrations further downwind, outside the Bay Area. In addition, incremental NOx emissions generated by the project and by cumulative development could lead to violations of the NO_2 standard with concomitant health effects; could reduce visibility; and, to a relatively small extent, due to the small magnitude of the increase and to

TABLE 7

PROJECTED DAILY POLLUTANT EMISSIONS

Pollutant	Project 1990	Cumulative List 1990[2]	Emissions (tons per day)[1] Downtown Plan[3] 1990	Downtown Plan[3] 2000	Bay Area[4] 1990	Bay Area[4] 2000
Carbon Monoxide	.07	17.0	6.8	6.6	1,952	1,883
Hydrocarbons	.006	1.4	0.6	0.6	428	428
Nitrogen Oxides	.007	1.8	0.8	0.8	558	610
Sulfur Oxides	.001	0.2	0.1	0.1	194	233
Particulates	.011	2.7	1.1	1.3	562	649

[1] Project, Cumulative List, and Downtown Plan emissions calculated using BAAQMD, EMFAC6C vehicular emission factors. Emissions of CO, HC and NOx include an assumed six minutes of idling time per vehicle trip. Emissions of TSP include dust entrained from roadway surfaces.

[2] Incremental emissions of downtown area development based on list of projected Cumulative Office Development in Downtown San Francisco as of March 10, 1984 (Table C-1, pages A-38 of this report).

[3] Incremental emissions of C-3 District development, per Downtown Plan Draft EIR, Table IV.I.2, page IV.I.12.

[4] Cumulative total emissions of Bay Area development, per ABAG, BAAQMD, MTC, 1982 Bay Area Air Quality Plan.

Source: EIP Corporation

TABLE 8

PROJECTED WORST-CASE CURBSIDE CARBON MONOXIDE CONCENTRATIONS AT SELECTED INTERSECTIONS

Intersection	Averaging Time	Concentrations (ppm)[1] 1984	Cumulative List 1990[2]	Downtown Plan[3] 1990	Downtown Plan[3] 2000
Mission/Fifth	1-hour	14.2	10.6	10.4	8.9
	8-hour	9.8	7.2	7.1	6.2
Market/Fifth	1-hour	12.9	9.6	9.3	8.0
	8-hour	9.0	6.6	6.4	5.6
Howard/Fourth	1-hour	14.8	10.9	10.8	9.3
	8-hour	9.7	7.0	6.9	8.0

[1]Calculations for all four scenarios were made for worst-case (poor dispersion) meteorology, using the modified linear rollback method. Background concentrations were calculated to be 7.3 ppm for one hour and 5.6 ppm for eight hours in 1984, 5.4 ppm for one hour and 4.1 ppm for eight hours in 1990 and 4.8 ppm for one hour and 3.7 ppm for eight hours in 2000. No excesses of ambient standards are projected to occur in 1990 or 2000. The one-hour state standard is 20 ppm, the one-hour federal standard is 35 ppm, and the eight-hour state and federal standard is 9 ppm.

[2]Based on list of projected Cumulative Office Development in Downtown San Francisco as of March 10, 1984, Table C-1, page A-35).

[3]Based on growth projection methodology contained in Downtown Plan Draft EIR, Table IV.I.3, page IV.I.16..

Source: EIP Corporation

dilution over time and distance, could increase acid rain further downwind, outside the Bay Area.

CO concentrations are predicted to be less in 1990 and subsequent years than in 1984. In 1990, traffic volumes in the downtown area would increase by about 8%, area-wide, over 1984 volumes. However, in 1990, the average vehicle is expected to emit 32% less CO than in 1984 due to ongoing state and federal emissions controls. The projected effects of state and federal emission controls on new vehicles (and the retirement of older, more polluting vehicles) would more than offset the increases in traffic volumes and traffic congestion.

Curbside CO concentrations at selected intersections affected by project-generated traffic, and by cumulative development traffic (based both on the Downtown Plan Draft EIR growth projections and on the March 10, 1984 cumulative list), were projected for worst-case conditions (poor dispersion meteorology), and are compared with the ambient standards in Table 8, page 51. These concentrations are also compared in the table to concentrations projected for C-3 District development by the Downtown Plan Draft EIR. The results indicate that violations of the state and federal eight-hour average CO standards currently occur at all three intersections under worst-case meteorological conditions. No excesses of the applicable CO standards are projected for 1990 at any of the three locations analyzed, under any scenario.

Emissions of TSP generated by the project and by cumulative development would increase TSP concentrations, which could increase the frequency of TSP standard violations in San Francisco, with concomitant health effects and reduced visibility.

Emissions of SOx generated by the project and by cumulative development would probably not bring San Francisco's SO_2 concentrations significantly closer to violating the standard.

The project, and other downtown development on the cumulative list or under the Downtown Plan, would not directly conflict with the pollution reduction strategies recommended by the 1982 Bay Area Air Quality Plan. These strategies consist primarily of HC and CO emission controls on stationary sources and motor vehicles, and transporta-

tion improvements, and are aimed at attaining the federal ozone and CO standards. In addition, emissions associated with the project and with the other downtown development are not projected by this EIR or by the Downtown Plan Draft EIR to increase ozone concentrations or to result in violations of CO standards, and thus would not indirectly conflict with the objectives of the 1982 Bay Area Air Quality Plan.

Alternative 1 to the Downtown Plan (covered in the Downtown Plan Draft EIR) would generate about 38% more emissions in 2000 (from development between 1990 and 2000) than would the Downtown Plan. Alternative 4 would generate about 7% less emissions than would the Downtown Plan. Emissions generated by Alternatives 2, 3 and 5 would fall within this range. The types of air quality impacts under these alternatives would be the same as those under the Downtown Plan; their magnitudes would vary in proportion to their differences in emissions.

The pollutant emissions and CO concentrations shown in Tables 7 and 8 were projected for 1990 on the basis of two different sets of future growth assumptions, with differing results. In one case, a list of specific projects proposed, approved and under construction was used (the list of Cumulative Office Development in Downtown San Francisco, March 10, 1984). In the other case, the employment growth trend approach of the Downtown Plan EIR was used, and those projections presented. In both cases, the method for the air quality analyses was identical. However, the results using projected cumulative development are not directly comparable with those from the Downtown Plan DEIR for several reasons.

First, it is reasonable to assume that the projected cumulative development on the list would be completed and occupied sometime between 1990 and 2000, rather than in either of those two analysis years used in the Downtown Plan Draft EIR. The pollutant emissions and CO concentrations were calculated for 1990 using the cumulative list, even though those projects are not expected to be completed until the mid-1990s, in order to provide the possibility of some comparison with the Downtown Plan Draft EIR results. However, this has the effect of artificially increasing the cumulative list results, because average-vehicle emission rates will decline with time, as a result of federal and state controls.

Second, the transportation analysis used for the Downtown Plan Draft EIR differs from that used for the cumulative list, as described in the Transportation section of this report (pages 23 to 31). Briefly, these differences include the fact that a cumulative list-based analysis assumes that the same proportion of new employees would commute by private auto as is currently the case. In contrast, the Downtown Plan Draft EIR analysis projects that commuters will shift from driving alone to using carpools and transit, because commute routes such as the Bay Bridge are already at or near capacity and could not accommodate all of the vehicles that would be used if the proportion of persons driving alone to work remained constant.

Other reasons for the differences include the use in the cumulative list analysis of a constant regional distribution of trips, whereas the Downtown Plan Draft EIR forecasts a declining percentage of new employees residing in San Francisco, and the lack in the cumulative list approach of discounting factors to account for trips between individual projects within the Downtown (see Section IV.B. Transportation of this DEIR).

Thus, total (regional) vehicle miles traveled and the resulting pollutant emissions projected using the cumulative list approach are considered artificially high. On a local intersection basis, traffic volumes and the resulting CO concentrations might or might not be higher with the cumulative list approach, depending on the particular location. This is because the cumulative list method does not distribute traffic on all the same streets in the same proportions as does the Downtown Plan Draft EIR method. For the two intersections analyzed here, the projected traffic volumes and CO concentrations are higher with the cumulative list approach.

The proposed project would be consistent with the growth projections and the specific transportation control measures contained in the Bay Area Air Quality Plan. Therefore, the project would be consistent with that plan.

D. ENERGY

The proposed project is subject to Title 24 of the California Administrative Code, which establishes energy conservation standards for the design and construction of buildings. The applicable regulations were adopted by the California Energy Resources Conservation and Development Commission, June 30, 1977 and went into effect January 1, 1978.[1] A new version of these standards is currently in preparation and is expected to be in force in 1984.[2]

Construction of the proposed rehabilitation project would require about 20 billion BTUs (British Thermal Units) of energy in the form of gasoline, electricity and diesel fuel.[3] This is the energy equivalent of about 3,500 barrels of oil.

The applicable regulations set standards governing the design and construction of the building envelope; heating, ventilating and air conditioning systems; service water heating; electrical distribution and lighting. The requirements of the standards must be satisfied in one of three ways:

- The energy budget method, which requires that energy consumption of the proposed building be calculated using a state-approved energy analysis computer program and compared to an allowable limit.
- The component performance standards method, which requires the incorporation of a set of specific design features.
- The use of nondepletable energy resources. (Energy from nondepletable sources, such as solar or wind energy, is not counted against the allowable energy budget.)

The documentation of compliance with these standards is submitted with the application for the building permit.

At this stage in project design, insufficient information is available upon which to base a building energy budget analysis for either Title 24 compliance or other engineering purposes. In lieu of that, estimates of the likely energy consumption of the proposed project have been made, based upon comparisons with other recent projects in San Francisco. The resulting estimates are shown in Table 9, page 56.

TABLE 9

ESTIMATED PROJECT ENERGY USE [1]

Allowable Under Title 24	
Total annual BTU[2] per square foot of office space	126,000 BTU per square foot per year
Total annual BTU per square foot of retail space	200,000 BTU per square foot per year
Monthly Electric Consumption[3,4]	
Estimated total monthly electric consumption	300,000 kilowatt hours per month
Estimated monthly electric consumption per square foot	1.5 kilowatt hours
Daily Natural Gas Consumption[5]	
Estimated daily natural gas consumption per square foot	40 BTU
Estimated peak daily natural gas consumption[6]	150 Therms
Annual Consumption	
Estimated total annual energy consumption	46 billion BTU, equivalent to 8200 barrels of oil
Estimated total annual electric consumption	4.1 million kilowatt hours per year
Estimated total annual natural gas consumption	34,300 therms per year
Connected kilowatt load	1,300 kilowatts

[1] Includes space conditioning, service water heating and lighting in accordance with allowable limits under Title 24. Estimated electricity consumed by appliances such as typewriters, computers, coffeemakers, etc., is included in the projections, although not included in the Title 24 estimates.

[2] BTU (British Thermal Unit): A standard unit for measuring heat. Technically, it is the quantity of heat required to raise the temperature of one pound of water 1: Fahrenheit (251.97 calories) at sea level.

[3]The amount of electricity that would actually be used includes non-occupant loads covered by Title 24 as well as electric loads from appliances such as computers, copiers and typewriters. The total estimated electricity consumption is based on unpublished building energy consumption data supplied by David Rubin, Department of City Planning, personal communication, April 1984.

[4]The assumed split between electricity and natural gas (90% electricity, 10% natural gas) use is based upon predicted consumption rates of other San Francisco projects. However, this "split" is sensitive to the design used; actual consumption rates may differ considerably.

Note: Energy Conversion Factors:
one gallon gasoline = 125,000 BTU
one kilowatt (kw) = 10,200 BTU assuming operational
efficiency of 33% for fossil or nuclear fueled power plant
one therm = 100,000 BTU
one barrel of oil = 5,600,000 BTU

[5]The amount of gas that would be consumed is based on unpublished building energy consumption data supplied by David Rubin, Department of City Planning, personal communication, April 1984.

[6]Since detailed engineering studies have not been performed for the proposed design, estimates of peak natural gas consumption are highly speculative. A review of load curves prepared for other projects indicates that peak demand may be about 50% greater than average demand. The estimate here is based on that assumption.

Daily and annual load distribution curves are not estimable at this time due to the unavailability of design information. Since load curves are not governed by Title 24, no reasonable assumptions are readily available. It may be noted, however, that similar projects in San Francisco for which load curves have been developed show peak electrical consumption on hot August or September afternoons due to demand for cooling, which coincides with PG&E's systemwide peak.[4] Typical load curves for natural gas and electricity are shown in Figures 9 and 10, pages 59 and 60. Natural gas demand of other projects has been predicted to peak during cold January mornings, which does not coincide with the systemwide peak. The drop in electrical demand at the noon hour is due to smaller demand for appliance operation and cooling as workers stop for lunch. The actual load curves for the proposed project would be expected to differ in shape and magnitude of demand from those in Figures 9 and 10. For example, if the retail portion operates during evening hours, additional energy would be used during those periods.

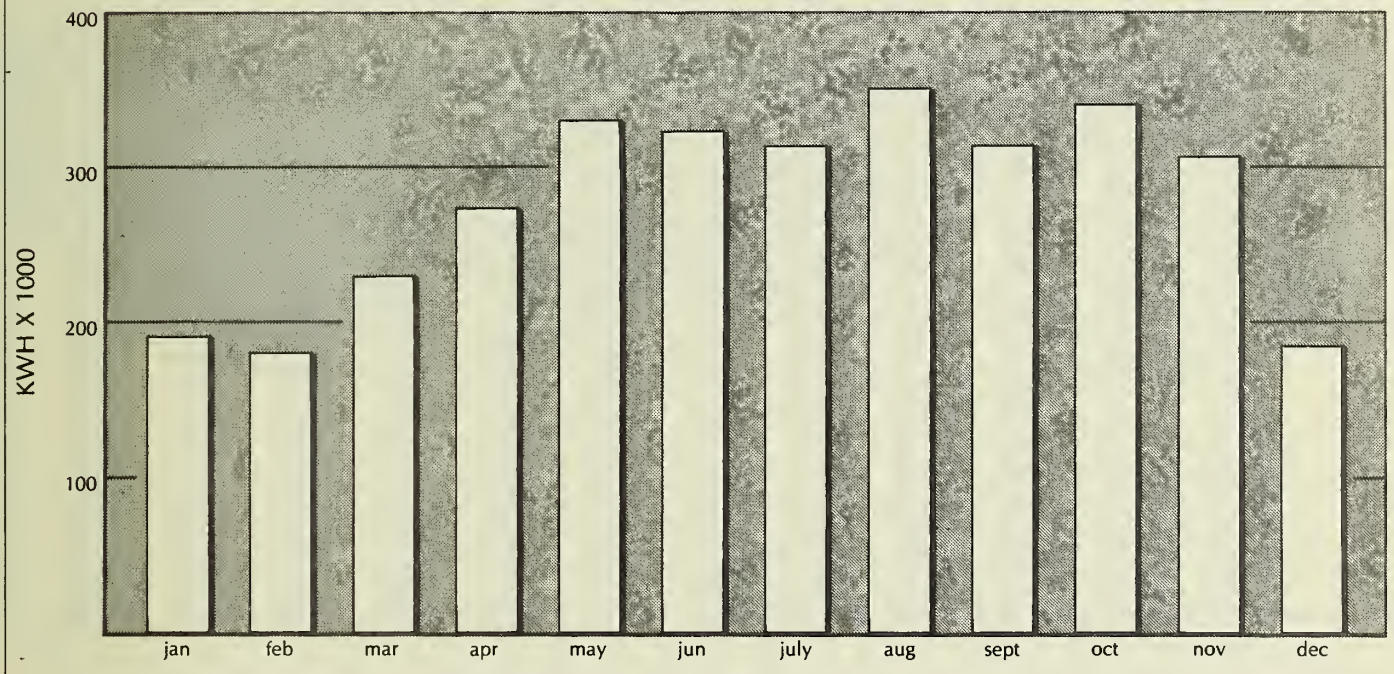
The Department of City Planning predicts future electricity consumption, based on the electricity use of 18 recently constructed buildings in the downtown area, to be about 18 kWh per square foot per year.[5] This number includes an estimate of the base power consumption of the building core, such as air circulation, cooling, mechanical and lighting loads as well as power demands due to increased use of electronic office machines including copiers, computers and word processors, which are generally in operation the entire work day. Yearly estimated electrical consumption for the projected 19 million square feet of additional office space in downtown San Francisco would be approximately 340 million kWh of electricity per year (see Appendix C, Table C-1, page A-38 for a list of these projects). Previous electrical consumption projections in EIRs did not include power used by office machinery.

Pacific Gas and Electric Company, in examining its ten-year load growth projections for San Francisco, believes that growth rates of net new office space in the downtown area will diminish in the next decade from the historic figure of 1.5 million square feet per year to between 1 million and 1.2 million square feet per year.[6] The utility company's current analysis of a typical office building yielded an annual consumption of about 17 kWh per square foot. This agrees with the City's estimate (noted above), within the limits of estimation methodology. Using these figures, total increased energy demand for the

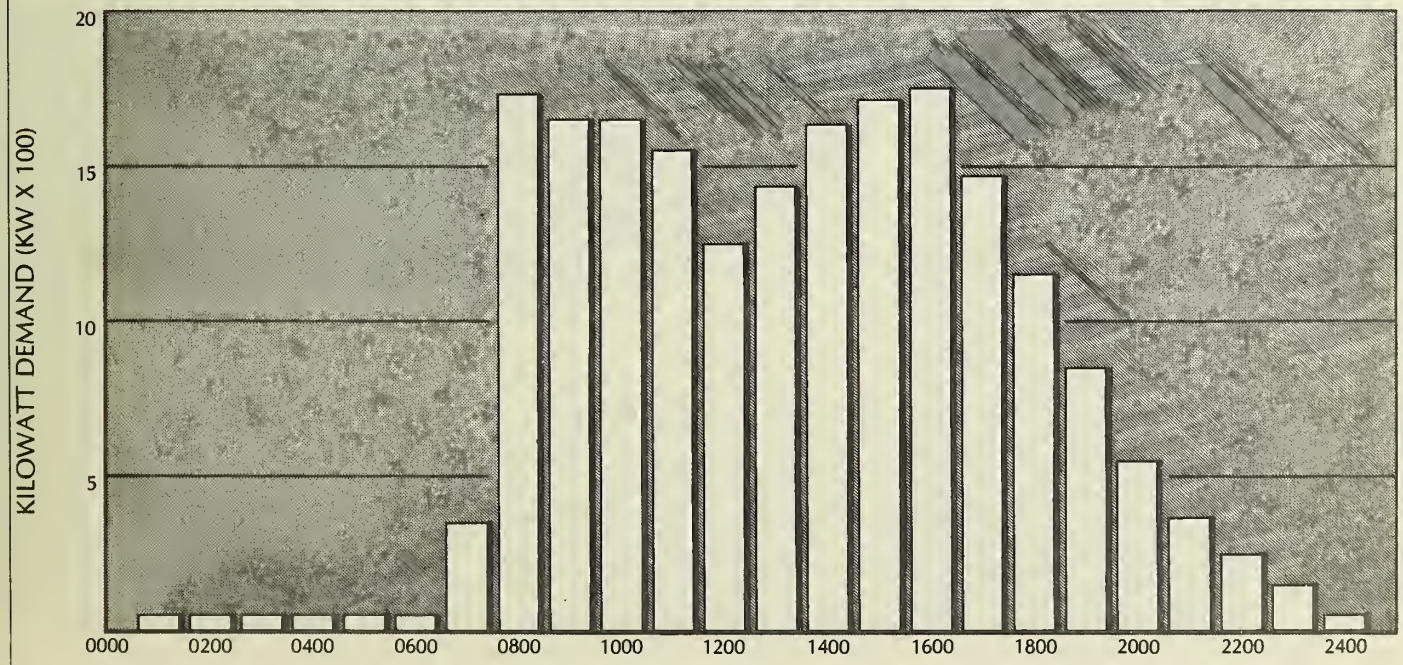
TYPICAL ELECTRICAL CONSUMPTION

FIGURE 9

SOURCE: DEPARTMENT OF CITY PLANNING FEIR,
Spear and Main Street Office Building, San Francisco, May 1982



MONTHLY CONSUMPTION

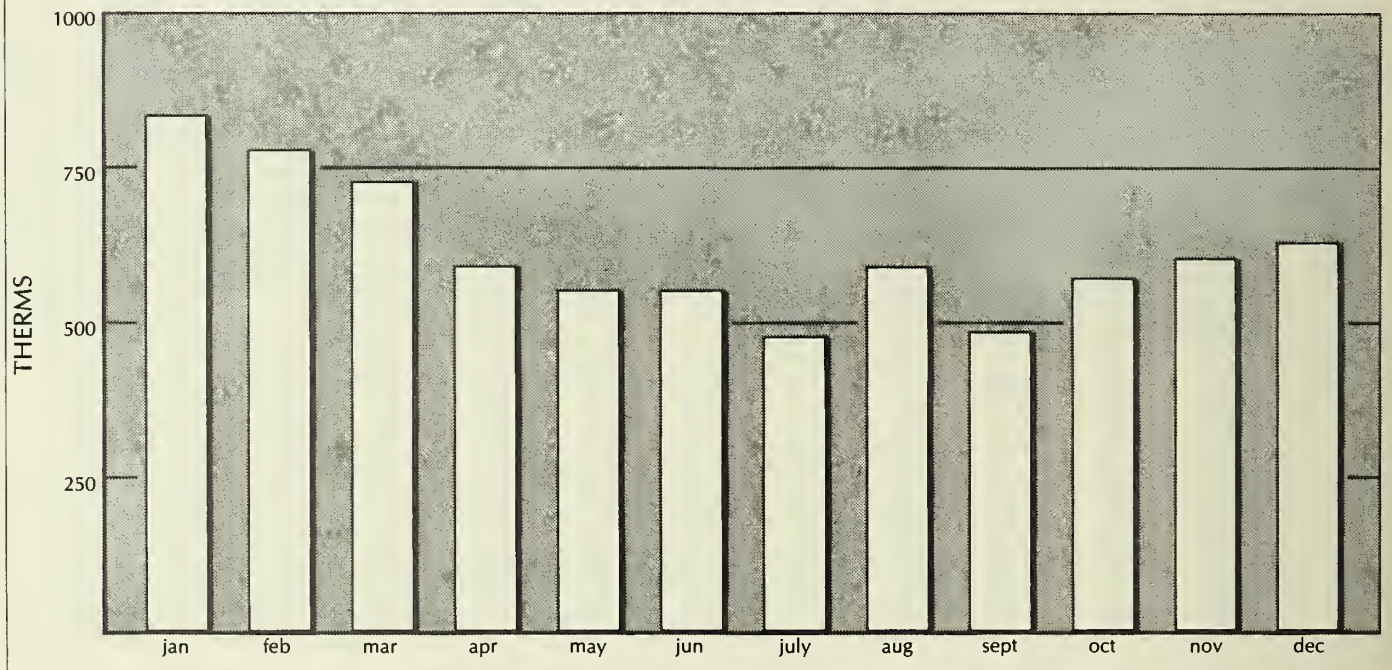


HOURLY CONSUMPTION

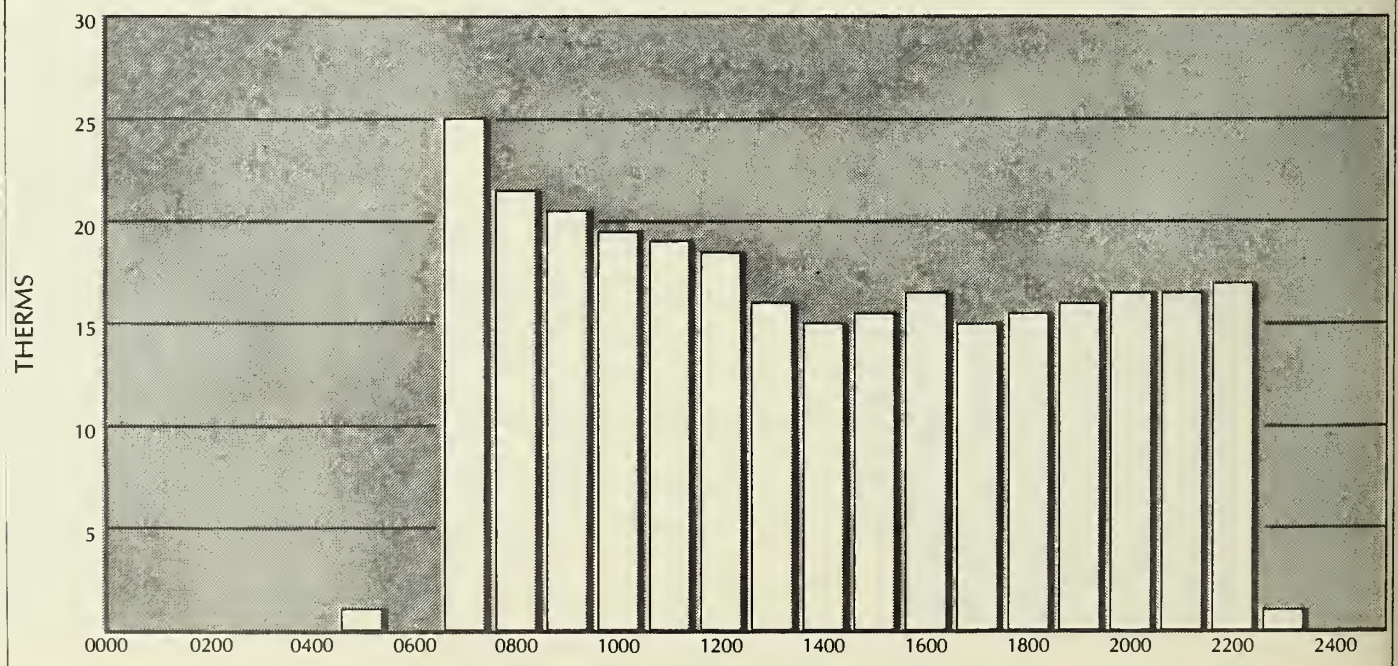
TYPICAL GAS CONSUMPTION

FIGURE 10

SOURCE: DEPARTMENT OF CITY PLANNING FEIR,
Spear and Main Street Office Building, San Francisco, May 1982



MONTHLY CONSUMPTION



HOURLY CONSUMPTION

next decade would be approximately 200 million kWh of electricity per year, less than projected using the cumulative list. The lower PG&E prediction is largely due to its lower estimation of future development.

Projections of energy use discussed in the Downtown Plan DEIR indicate an increase of about 210 million kWh of electricity per year between 1984 and 1990 as a result of all new development occurring in the C-3 District. From the period 1990 and 2000, electrical consumption rates would increase annually by 330 to 350 million kWh above present figures, or 120 million to 140 million kWh above the increases estimated for the 1984-1990 period.[7] Both estimates are for growth that would occur under the Downtown Plan scenario.[8] Electricity requirements for development that would occur with the Alternatives proposed in the Downtown Plan DEIR predict an increased demand of between 300 million kWh per year to 500 million kWh per year between 1984 and 2000.[9]

For two reasons, estimates referred to in the Downtown Plan DEIR are not directly comparable to those estimates made by applying a kWh-per-square-foot-per-year generation factor to the square footage of projected cumulative development (list method). First, the energy projections made using the list method estimate energy demand at the time of full buildout (mid-1990s) rather than during the 1984-1990 and 1990-2000 time periods as in the Downtown Plan DEIR. Second, about 75% of the projects on the March 10, 1984 list of projected cumulative development in downtown San Francisco fall within the C-3 District boundary, which means the list method estimates energy consumption for a larger area than the Downtown Plan DEIR.

The PG&E projection cannot be compared to the projections in the Downtown Plan DEIR because they cover different time periods. A comparison of the Downtown Plan and PG&E estimates for projected energy demands in downtown San Francisco for the last decade of the century is currently being prepared by PG&E in a report to be released later this year.

Natural gas consumption for new office development would be less than current demand, which includes consumption in older, less energy-efficient buildings. The Department of City Planning estimates that natural gas use by new buildings in the year 2000 would be 11 cubic feet per square foot per year.[5] The Department further estimates that, between

1984 and 2000, gas consumption will grow by 470 million cubic feet per year, of which about 210 million cubic feet per year would be for office uses. PG&E is currently assessing projected demands for the San Francisco area in a report to be released later this year.

PG&E plans to meet increased San Francisco energy demands to the year 2000 are discussed on pages IV.G.13-14 of the Downtown Plan DEIR, which are hereby incorporated by reference.

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[1]State of California Energy Resources Conservation and Development Commission, Conservation Division, Energy Conservation Design Manual for New Nonresidential Buildings, October 1977.

[2]Al Deterville, Project Administrator, California Engineering Commission, Sacramento, California, telephone conversation, November 29, 1982.

[3]Based upon 2,000 BTUs per dollar of construction cost. This figure was developed from information contained in Meckler, Milton, Energy Conservation in Buildings and Industrial Plants, McGraw Hill, New York, 1981.

[4]Load curves for air-conditioned office buildings in San Francisco tend to be similar across a wide range of building designs. This similarity is because energy consumption rates correlate well with outside temperature and working hours. The load curves shown in Figures 9 and 10 were selected to provide an indication of the actual loads, which cannot be calculated until the design work has proceeded further. Examples of similar load analysis can be found in the Final EIR's for projects at 466 Bush (EE 81.175), Five Fremont Center (EE 80.36), 101 Montgomery (DR 80.24), and 101 California (CU 70.12).

[5]Unpublished building energy consumption data supplied by David Rubin, Department of City Planning, personal communication, January 1984.

[6]Ken Austin, Commercial-Industrial Marketing Supervisor, Pacific Gas and Electric Company, letter of March 23, 1984. Available for public review at the Department of City Planning, Office of Environmental Review, 450 McAllister Street, 5th Floor, San Francisco.

[7]The Downtown Plan EIR uses a consumption rate factor of 18 kwh/square foot/year from 1984-1990 and 16 Kwh/square foot/year from 1990-2000. These different factors are due to Title 24 revisions to reduce building energy budgets. These new standards would be reflected by lower electrical consumption in buildings constructed by 1990.

[8]San Francisco Department of City Planning, Downtown Plan DEIR, pages IV.G.1 - IV.G.17.

[9]Ibid., pages VII.G.1 - VII.G.4.

E. HOUSING

1. Project-Related Effects

The office portion of the project could increase the demand for housing in San Francisco. According to the City Planning Commission's Office Housing Production Program (OHPP), the housing demand generated by this office space would be 129 units.[1] This estimate assumes that there would be one employee per 250 gross square feet of office space, that 40% of the new office workers will would move to San Francisco as a result of the project, and that there would be an average of 1.8 office workers per household. There had been 19,000 square feet of office space within the former use existing on-site, which has been excluded from the total in the calculation of housing demand. This exclusion of 19,000 square feet of office space, based upon existing public authorization for its office use would result in a demand under OHPP for 112 units.[1]

An alternative analysis of the relationship between downtown office growth and housing demand in San Francisco was documented in a report prepared by Recht Hausrath and Associates, Economists, which appears as Appendix C, pages 289 through 329, of the 101 Montgomery Street EIR, certified by City Planning Commission Resolution 8941, May 7, 1981. This report is available for public review at the Office of Environmental Review, 450 McAllister Street, fifth floor, and is hereby incorporated by reference into this EIR pursuant to Section 15149 of the California Environmental Quality Act (CEQA) guidelines.

This study estimated that 15% to 30% of the people newly employed in San Francisco as a direct result of downtown office projects would move to San Francisco, and that there is an average of 1.4 San Francisco workers in each San Francisco household containing downtown workers. Under these assumptions, the project would have a demand for about 54 to 108 households in San Francisco.[2] The study further concluded that most people cannot afford housing costs in the City despite relatively high wages and employment opportunity.

a. Housing Affordability

Based on available data, an approximation of a housing affordability analysis appears in Appendix D, Table D-2, page A-42. Data in the table rely on published sources of office worker incomes (not household income), and prices of housing (without regard to housing availability). Assumptions are made regarding ratio of housing expenses to income,

mortgage interest rates and down payments. Analysis based on these data and assumptions indicates that most project employees would not be able to afford housing ownership in San Francisco, although a significant minority, depending on the number of workers per household, would be able to do so. Most project employees, except the lowest-paid clerical employees desiring to live alone, would be able to afford rental housing in San Francisco.

Pursuant to the California Environmental Quality Act (CEQA) Guidelines, Section 15149a, discussion of housing affordability for new office workers is incorporated by reference from the Second Street Square Final EIR, 82.591E, certified January 12, 1984 (pages 53-55). Briefly, while a survey of occupants of a building comparable to the project would yield some housing affordability data, accurate identification of housing affordability characteristics for persons entering the San Francisco housing market as a result of a new office project is virtually impossible. The problems with making such a determination include: i) the identity and financial resources of persons employed in the newly constructed space; ii) persons working in the newly constructed space (in old or newly created jobs) may not be newly employed in San Francisco; and iii) persons newly employed in San Francisco in newly created jobs may not have obtained their job as a result of new office development. Even if the number of new employees and their preferences for housing were known, a household's ability to pay for housing depends on a variety of factors in addition to individual income, such as family composition and housing preferences.[3]

2. Cumulative Effects

a. Downtown Office Space

The proposed project, together with other major downtown office buildings under formal review (8.7 million net new square feet), approved (4.8 million net new square feet) and under construction (5.1 million net new square feet) would add about 19.0 million gross square feet of net new office space if all were to be built (see Appendix C, Table C-2, page A-43 of this report). This list subtracts existing office space, on the sites of new buildings, that would be demolished. Of the 19.0 million square feet of office space on the cumulative list, about 12.8 million are within the C-3 District.

Projections for alternatives in the Downtown Plan Draft EIR for the C-3 District indicate a total of about 70.5 million gross square feet of office space in 1990 and between 77.5 and 86.5 million gross square feet of office space in 2000, an increase of 14.4 to 24.4 million square feet. The Downtown Plan would result in an increase of about 16.8 million square feet.[4] These projections considered land availability, location preferences, market conditions and economic trends as independent variables, plus various zoning and planning policies of the Downtown Plan and the five alternatives analyzed in the Downtown Plan DEIR. The forecasts in the Downtown Plan DEIR are of space expected to be built and occupied in the C-3 District between 1984 and 2000.

The amounts of office space on the cumulative list and in these forecasts, although distinct from each other, can be compared. The list contains about 12.8 million square feet of office space in the C-3 District and the Downtown Plan DEIR indicates about 8.4 million square feet of office space being added to the C-3 District between 1984 and 1990. The 12.8 million square feet on the list would be expected to be absorbed in the mid-1990s.

Office space projections for all alternatives in the Downtown Plan DEIR for the year 2000 would exceed existing office space plus office space on the cumulative list, as the cumulative list cannot take into account projects not yet proposed. Office space on the cumulative list would be absorbed in the mid-1990s under all Downtown Plan DEIR alternatives. These comparisons are based on the assumption that all projects on the cumulative list would be built as proposed and projects not yet proposed (i.e., not on the cumulative list) would not be built before the years identified above. In addition, these comparisons are based only on projects on the cumulative list within the C-3 District.

b. Residence Patterns and Housing

This section takes a long-term perspective, focusing on changes in downtown office workers living in San Francisco and the housing market implications of downtown growth.

Future Residence Patterns: Employment growth and building development in downtown San Francisco will result in more employees working and living in the City. Over time, more existing residents will take San Francisco jobs and others who take San Francisco jobs will move into the City.

Downtown Plan Forecast as Cumulative Context: Forecasts of residence patterns in the year 2000 were prepared for the Downtown Plan DEIR.[5] The scenario of C-3 District building development and employment growth under the Downtown Plan, as described in the Downtown Plan DEIR, incorporates the effects of policies affecting the size, cost and location of new development as well as underlying economic conditions influencing the demand for space. The forecasts of residence patterns for this growth scenario incorporate future housing, labor force and employment patterns in San Francisco and throughout the region and consider changing demographic, housing market and transportation factors.

According to the Downtown Plan forecasts, approximately 137,000 C-3 District office workers would be living in San Francisco in 2000. This represents an increase of 25,000 residents employed in C-3 District offices over the 112,000 estimated for 1984, a 22% increase.[6] Relatively more employed San Franciscans would be employed in C-3 District office jobs. The percentage (employed San Franciscans holding C-3 District office jobs) would increase from 32% in 1984 to 34% in 2000. Relatively fewer C-3 District office jobs would be held by San Franciscans. The percentage (C-3 District office jobs held by San Franciscans) would decline from 50% in 1984 to 45% in 2000. These changes would be the result of cumulative development and employment growth in the C-3 District between 1984 and 2000.

It is important to understand the difference between the two percentages above. In each case, the same estimate of the number of jobs held by San Francisco residents is compared to an estimate for a larger group: to all employed residents of the City in the first instance and to all C-3 District office employment in the second. The percentages are different since the number of employed residents is different from the number of office jobs. These percentages both describe the same employment situation, but from different perspectives.

The Downtown Plan forecasts fall within the range of estimates of C-3 District office workers living in San Francisco that was identified by the analysis of Alternatives in the Downtown Plan DEIR. By 2000, the Alternative forecasts range from 136,000 to 140,000 office workers living in San Francisco. The growth from 1984 to 2000 ranges from 24,000 to 28,000 additional office workers living in the City. The relative comparisons described above apply to all the Alternatives; the percentage of total employed San Franciscans

working in C-3 District office jobs would increase while the percentage of C-3 District office jobs held by residents would decline.

The proposed project, if approved, would be developed during this time period; businesses and employees would occupy the building; and, therefore, the project would contribute to the changes described above. The project would add about 126,000 square feet of office space to downtown San Francisco. Over the 1984-2000 period, a net addition of about 16.8 million square feet of office space is forecast for the C-3 District under the Downtown Plan.[7] (This estimate includes development of new office space and incorporates conversions and demolition of existing space.) The proposed project represents about 0.7 percent of the total increase in office space in the C-3 District over this period.

Two formulas have been developed to estimate residence patterns on a project basis. (Project-related housing effects are discussed on page 69 of this PDEIR.) The assumptions as well as the formula variables and their values are different. Nevertheless, the estimates that they provide represent a range of possible results.

Using the OHPP formula, the project would be associated with about 200 office workers living in San Francisco. Using the 101 Montgomery EIR formula, the increase in office workers living in San Francisco would range from 76 to 152.[8] In the context of cumulative changes in residence patterns under the Downtown Plan, the project would contribute from 0.3 percent to 0.6 percent of the total change, depending on the formula. (For this analysis, the formulas have been used to develop estimates of increases in office workers living in San Francisco. These estimates have not been converted into numbers of households. This approach was taken so that the project-related information would be comparable to the Downtown Plan DEIR analyses and forecasts which describe increases in office workers and do not identify households.)[9]

c. Estimates Based on the List of Office Projects in Downtown San Francisco

An alternative means of evaluating the cumulative effects of office projects such as the proposed project is to use the list of all projects that are under formal review. As of March 10, 1984, the City's list of such projects included the net addition of about 19.0 million square feet of office space. (This list is discussed in Appendix C, page A-38 of this report.) The list incorporates projects proposed in the greater downtown area which

is larger than the C-3 District. Of the 19.0 million square feet total, the list includes 12.8 million square feet in the C-3 District. This amount of space is smaller than the 16.8 million square feet forecast for the C-3 District by 2000 in the Downtown Plan DEIR.

The proposed project would represent about 0.7 percent of the total net new office space on the March 10, 1984 cumulative list. To compare the project's effects to the potential overall effects if all the projects on the list were built as proposed, it is possible to calculate from the list the change in the number of downtown office workers living in San Francisco. The two formulas used above for estimating the project's effects are applied to the total square footage for all projects on the list.

The development of all projects on the list would result in about 30,400 additional downtown office workers who live in the City, according to the OHPP formula. Using the range from the 101 Montgomery EIR formula, there would be 11,400 to 22,800 additional office workers living in the City if all projects on the list were built. The project would represent less than 0.7 percent of these larger estimates of office workers living in the City.

d. Differences In Cumulative Approaches

There are several important differences between the two approaches to cumulative analysis: the approach of forecasting space and employment and the approach of using a list of proposed projects. The first approach is currently limited to C-3 District office space while the second covers a larger geographic area. In addition, there is no definite timeframe associated with the list, while the forecasts represent a best estimate of the development likely to be built and occupied from 1984 to 2000. Finally, the forecast methodology incorporates changes in economic activity and employment that would occur in the use of existing space while the list only includes the changes accommodated by new construction.[10] It is because of these differences that the cumulative estimates of future residence patterns under each approach are not comparable. Within each approach, however, the project can be compared to the cumulative totals as described above.

e. Housing Market Implications[11]

With continued office growth, there would be more people with preferences for San Francisco housing and with greater financial resources to pay for housing. These effects have impacts on the City's housing market.

At a minimum, continued office employment growth at the levels reflected by the Downtown Plan DEIR forecast and the cumulative list would contribute to keeping prices and rents at their current levels (in constant dollars). Depending on the future of other factors (such as interest rates and the availability of mortgage money), employment growth could contribute to a future situation where prices and rents are moderately higher, on average, than current levels.

Higher prices/rents for San Francisco housing would mean that some people would decide not to move into San Francisco, current residents who rent would find it more difficult to buy a home, and some existing residents would move out of the City if they find more acceptable housing elsewhere. Many others would continue to live in San Francisco and to pay higher prices/rents for City housing. Still others, who are unable to pay more, would be forced to accept housing which does not meet their preferences or needs. And finally, owners of existing units would benefit to the extent that their investments appreciate.

The proposed project, as part of the future pattern of downtown office development, would contribute to these housing market impacts. The project's individual contribution cannot be separately identified.

In terms of the region's housing market, downtown office development and employment growth would not, by themselves, make a noticeable difference in the housing markets in other Bay Area counties or in the region overall. As a part of total regional employment growth to the year 2000, however, increases in San Francisco office employment can be viewed as contributing to regional housing demand. A strong regional economy has and will continue to be a factor supporting a competitive regional housing market with relatively high housing prices and rents.

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[1]Office Use: $\frac{126{,}000 \text{ net new square feet}}{250} \times 40\% \div 1.8 = 112$

$\frac{145{,}000 \text{ total square feet office space}}{250} \times 40\% \div 1.8 = 129$

San Francisco Department of City Planning, Revised Guidelines for Administering the Housing Requirements Placed on Office Development under OHPP, December 7, 1981, page 5.

[2]Recht Hausrath & Associates, The Feasibility of Performing a Housing Affordability Analysis Relevant to Office Growth in Downtown San Francisco, July 1982.

[3]Questor Associates, Feasibility of Performing a Housing Affordability Analysis, June 15, 1982. This study is available for public review at the San Francisco Department of City Planning, 450 McAllister Street, 5th Floor.

[4]Department of City Planning, Downtown Plan Draft EIR, EE 81.3, March 16, 1984, pages IV.B.17-IV.B.31 and Appendix G, pages G.37-G.41.

[5]For a description of the methodology used to forecast residence patterns, see Appendix I, Downtown Plan DEIR, EE81.3, published March 16, 1984, pages I.8 - I.30. For a description of existing and forecast future residence patterns of C-3 District workers, see Downtown Plan DEIR, Section IV.D, Residence Patterns Housing. Appendix I and Section IV.D of the Downtown Plan DEIR are hereby incorporated by reference into this EIR pursuant to Section 15149 of the CEQA Guidelines.

[6]Downtown Plan DEIR, page I.36.

Only the forecasts of residence patterns for C-3 District office workers are described here. The Downtown Plan DEIR presents residence patterns for all C-3 District workers, of which office workers represent the largest group.

The forecasts presented here are for all C-3 District office employment, including management/technical and trade/customer service office activities.

[7]Downtown Plan DEIR, page IV.B.34

[8]There are two primary reasons for the differences in the estimates of office workers living in San Francisco as derived from the two formulas. One is that they include different assumptions about the increase in office workers living in San Francisco (40% in the OHPP formula as compared to 15-30% in the 101 Montgomery EIR formula). The 101 Montgomery EIR formula includes the low estimate (15%) to adjust for the fact that some increase in downtown office workers will include individuals who already live in San Francisco when they become newly employed in a downtown office job. The 101 Montgomery Street Final EIR is hereby incorporated by reference into this EIR pursuant to Section 15149 of the CEQA Guidelines.

It should be noted that both formulas above were derived from earlier databases. Therefore, the Downtown Plan DEIR analysis and forecasts are not identical to the formulas. Procedures for applying that analysis on a project basis have not been developed. However, the results of applying such a revised formula would likely fall within the range identified by the two existing formulas described herein.

[9]See Downtown Plan DEIR, pp. IV.D. 76-77 for a discussion of reasons why increases in the number of City residents working in the C-3 District do not necessarily represent corresponding increases in the number of households. This section is herein incorporated by reference.

[10]As explained in the Downtown Plan DEIR, the use of existing space is expected to intensify by the year 2000. As a result, office employment is forecast to exceed the growth of employment accommodated by the development of office space. For example,

from 1990 to 2000, more intensified use of existing space to accommodate employment growth would be equivalent to about a 40 percent increase in the net addition of office space forecast for that period. (See page IV.B.41 in Downtown Plan DEIR.)

[11]This subsection presents a summary of the discussion in the Downtown Plan DEIR. (See pages IV.D.77-IV.D.82.)

F. GROWTH INDUCEMENT

At full operation, the project would accommodate about 830 net new permanent jobs, including office, managerial, retail, restaurant and maintenance positions. To the extent that the building is fully leased and the availability of its space does not create permanent vacancies in other Bay Area office buildings, total employment in the Bay Area could increase by another 646 permanent jobs through the multiplier effect.

The project would be a rehabilitation of an existing building in an already developed urban area and would not require new construction or extension of public services or utility systems. Any net increase in employment in the downtown area would increase the demand for retail goods and food services in the area. The project would contribute to this demand, which would be met in part by the 80,000 gsf of retail space proposed in the project.

The project would add approximately 126,000 net new gross square feet of office space. It would provide 0.7% additional office space to downtown San Francisco. To the extent that the project would attract new residents or commuters who otherwise would not have been attracted to San Francisco or the Bay Area, the demand for commercial, social and municipal services would be increased, as would be the demand for housing. It is estimated that the proposed project would generate a demand for approximately 54 to 112 households in San Francisco. Additional demand for housing in the region may also occur. However, the specific locations within the Bay Area selected by potential employees working in San Francisco cannot be predicted.

If marketed successfully, the proposed project together with other planned office development, could have growth-inducing effects by increasing land values and encouraging other similar rehabilitation projects in the mid-Market and South of Market areas, subject to City land use and other regulations.

V. MITIGATION MEASURES WHICH WOULD MINIMIZE THE POTENTIAL IMPACTS OF THE PROJECT

A. HOUSING

MITIGATION MEASURE INCLUDED AS PART OF PROJECT

The City Planning Commission's Office Housing Production Program stipulates mitigation of housing impacts. The office portion of the project is estimated to add demand for 112 housing units. The project sponsor would fulfill the OHPP requirements by causing the construction of 112 off-site housing units and/or credits. The OHPP program allows units or "credits." Credits are given on a two- (or more) for-one basis for moderate- or low-income units. Multiple credits are allowed under the OHPP Guidelines for these units to "promote and stimulate the production of affordable housing" in the face of "economic considerations which dictate that economic incentives be given" for this purpose. The use of credits generally results in fewer units than the demand projected, while the units thus produced tend to be in the more affordable range or larger units. The City Planning Commission would determine whether proposed measures would mitigate housing demand caused by the project.

MITIGATION MEASURE NOT INCLUDED AS PART OF THE PROJECT

The project sponsor could mitigate housing impacts by causing the construction of 112 off-site housing units.[1]

B. TRANSPORTATION

MITIGATION MEASURES INCLUDED AS PART OF PROJECT

- During the construction period, construction truck movement would be permitted only between 9:00 a.m. and 4:00 p.m. to minimize peak-hour traffic conflicts. The project sponsor and constuction contractor would meet with the Traffic Engineering Division of the Bureau of Engineering of the Department of Public Works, the Fire Department, Muni and the Department of City Planning to determine feasibile traffic mitigation measures to reduce traffic congestion during construction of this project and other nearby projects.

- To minimize cumulative traffic impacts due to sidewalk and curb excavation and possible lane closures during construction, the project sponsor would coordinate with construction contractors for any concurrent nearby projects that are under construction, planned for construction, or later become known.

- Within a year of full occupancy of the project, the project sponsor would conduct a survey, in accordance with methodology approved by the Department of City Planning, to assess actual trip generation patterns of project occupants and actual pick-up and drop-off areas for carpools and vanpools. The project sponsor would make this survey available to the Department. This measure would provide needed information to aid in transportation planning within the City. Alternatively, at the request of the Department, the sponsor would provide a fair and equitable in-lieu contribution toward an overall transportation survey for the downtown area to be conducted by the City.

- Pacific Gas and Electric Company would coordinate work schedules with other utilities requiring trenching, so that street disruption would take place during weekends and off-peak hours. This would be done through the San Francisco Committee for Utility Liaison on Construction and Other Projects (CULCOP).

  This measure is outside the jurisdiction of the sponsor and would be implemented by CULCOP.

- The placement of paving, landscaping or structures in the sidewalk area (subject to City approval) would be done in such a way as to minimize interference with pedestrian traffic.

- The project sponsor would, in consultation with the Municipal Railway, install eyebolts or make provisions for direct attachment of eyebolts for Muni trolley wires on the proposed building wherever necessary. The sponsor may agree to waive the right to refuse the attachment of eyebolts to the proposed building if such attachment is done at City expense. (The Municipal Railway Five Year Plans identify existing and proposed routes.)

- Along Stevenson Street, on owner-controlled property, the project sponsor would apply to DPW to install bollards at least every ten feet on the sidewalk to prevent parking on the sidewalk.

- The project sponsor would initiate a comprehensive transportation system management (TSM) program aimed at reducing the peak-hour effects of project travel. The project sponsor would:

  - Designate a permanent Transportation Coordinator as part of the building management staff

  - Encourage the investigation and implementation of flex-time programs by providing information on the program's advantages, feasibility, etc.

  - Develop a parking program giving priority to ride-sharing vehicles

  - Sell Muni Fast Passes and other monthly commute passes on-site

  - Make transit routes and schedule information available to employees

- Develop and maintain carpool and vanpool matching services

- Building directories and signs for the service elevators would be placed in the loading area.

MITIGATION MEASURES NOT INCLUDED AS PART OF THE PROJECT

- Should Ordinance 224-81, which requires the sponsor to contribute funds for maintaining and augmenting transportation service in an amount proportional to the demand created by the project, be declared invalid by the courts, the project sponsor has agreed to participate in any subsequent equivalent mitigation measures adopted in lieu thereof that are equitable and legal, which the City adopts to apply to all developments which are similarly situated.

- Secure, safe bicycle storage facilities would be provided relative to the demand generated by the project for commuters and short-term visitors.

C. AIR QUALITY AND CLIMATE

MITIGATION MEASURES INCLUDED AS PART OF PROJECT

Measures to reduce traffic volumes or congestion would also reduce air pollutant emissions. These include encouragement of: transit use by employees; flexible work hours; carpools, vanpools and bicycles. Also, construction vehicle traffic would be prohibited during peak traffic hours.

The California Health and Safety Code requires that measures be taken to minimize dust generation; specifically, watering of demolition materials and soils. The project sponsor would require the contractor to implement a twice-daily watering program, which would reduce the likelihood of airborne construction dust and particulates exceeding state and federal standards. An effective watering program (complete coverage twice-daily) can reduce emissions by about 50%. Adjacent streets would be mechanically swept by the demolition and excavation contractors so that silt would not be washed into the storm drains and dust would be removed.

D. ENERGY

MITIGATION MEASURES INCLUDED AS PART OF PROJECT

Potential mitigation measures considered as part of the design process would include, but not necessarily be limited to, the following:

- improved insulation
- increased use of daylighting
- active and passive solar features with payback of less than five years
- load shedding
- individual fan units on each floor
- parabolic lighting
- high-efficiency ballasts for fluorescent lighting
- high-efficiency motors
- computerized energy management
- fluorescent lighting (wattmisers) with switching from four bulbs per fixture to two
- variable air volume space conditioning system
- separate metering of each floor of offices
- economizer cycle in HVAC Systems

Detailed engineering studies would be performed to identify applicable energy conservation measures. A letter explaining the choices and the technical basis for the decisions concerning which energy conservation features would be included in the project will be supplied to the Energy Section of the Department of City Planning prior to the issuance of the building permit.

E. HAZARDS

MITIGATION MEASURE INCLUDED AS PART OF PROJECT

An evacuation and emergency response plan would be developed by the project sponsor or building management staff, in consultation with the Mayor's Office of Emergency Services, to ensure coordination between the City's emergency planning activities and the project's plan and to provide for building occupants in the event of an emergency. The project's plan would be reviewed by the Office of Emergency Services and implemented by building management insofar as feasible before issuance of final building permits by the Department of Public Works.

F. HISTORIC AND CULTURAL RESOURCES

Should evidence of cultural or historic artifacts of significance be found during project excavation, the Environmental Review Officer and the President of the Landmarks Preservation Advisory Board would be notified. The project sponsor would select an archaeologist or other expert to help the Office of Environmental Review determine the significance of the find and whether feasible measures, including appropriate security measures, could be implemented to preserve or recover such artifacts. The Environmental Review Officer would then recommend specific mitigation measures, if necessary,

and recommendations would be sent to the State Office of Historic Preservation. Excavation or construction which might damage the discovered cultural resources would be suspended for a maximum of four weeks to permit inspection, recommendation and retrieval, if appropriate.

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[1]The 19,000 gsf of existing office space (which would create 17 units under OHPP guidelines) was excluded from the demand calculations because this component had prior authorization and no public approval would be required for this.

VI. SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED IF THE PROJECT IS IMPLEMENTED

No project-specific significant impacts have been identified. Measures included as part of the project are described in Chapter V., Mitigation Measures, page 73.

Cumulative impacts in Downtown San Francisco will cause significant effects in traffic increases on Muni, BART and other transit carriers. The proposed project would contribute to these cumulative effects.

This chapter is subject to final determination by the City Planning Commission as part of their certification process. Chapter VI of the Final EIR will be revised, if necessary, to reflect findings of the Commission.

VII. ALTERNATIVES TO THE PROPOSED PROJECT

This chapter identifies alternatives to the proposed project, discusses the environmental impacts associated with these alternatives, and states the reasons why the alternatives were rejected by the sponsor in favor of the project. Regardless of the sponsor's reasons for rejection, the City Planning Commission could approve an alternative over the proposed project if the Commission believes the alternative is more appropriate for the site.

A. ALTERNATIVE ONE: NO PROJECT

1. Description

This alternative would involve no change to the project site as it now exists. The 901 Market Street building would remain vacant with no interior or exterior rehabilitation taking place.

2. Impacts

With the retention of the project building in its present deteriorating state, none of the following effects associated with the proposed 901 Market project would occur:

The existing transportation and air quality conditions would continue on streets around the site. The peak hour level of service on the streets would remain unchanged and Muni load effects would be slightly lower than if the proposed project were implemented. Current levels of parking demand, noise, air pollution, and energy consumption would not change as a result of the project.

3. Reasons for Rejection

The project sponsor rejected this alternative because it does not meet the sponsor's objectives. Some of these objectives are:

- Preservation of an architecturally significant building
- Provision of uses in a mix that effectively utilizes building configuration
- Visual improvement of the southwest corner of the Fifth and Market Streets
- Revitalization of retail activity at the southwest corner of Fifth and Market Streets
- Creation of a focal point to attract tourists and city residents to the central Market Street area
- Diminution of hazards due to lack of modern seismic and fire protection systems in the existing building
- Rehabilitation of large floor office space (above 25,000 gross square feet per floor)
- Provision of retail and office uses at an important transportation node.

This alternative would not respond to the policies of the Urban Design Element of the Comprehensive Plan, namely: "to preserve notable landmarks and areas of historic, architectural or aesthetic value, and promote the preservation of other buildings and features that provide continuity with past development."

B. ALTERNATIVE TWO: REHABILITATION WITH ALL RETAIL

1. Description

In this alternative, the six-story, approximately 220,000-gross-square-foot building would be rehabilitated into all retail uses, and the building's services would conform to current seismic safety and building code standards.

2. Impacts

The building's appearance would be improved by the rehabilitation.

The only office space in this alternative consists of the approximately 19,000 gsf that currently exists. Retail activity would generate about 3,100 more (43%) pedestrian trips than the proposed project (10,100 total daily pedestrian trips vs. 7,000 total daily

pedestrian trips). The elimination of all office use would generate more daily trips and more peak-hour trips compared to the proposed project. Additionally, carbon monoxide (CO) concentrations would be about 5% more than the proposed project, and energy demand for the building would be about 15% to 20% greater than for the proposed mix of retail and office uses.

3. Reasons for Rejection

The project sponsor has rejected this alternative because it does not meet the development objectives of:

- Provision of uses in a mix that effectively utilizes building configuration
- Rehabilitation of large floor office space in an architecturally significant commercial building (above 25,000 gross square feet per floor)
- Provision of retail and office uses at an important transportation node.

The project sponsor has attempted to market the existing building for retail use to major retailers, with a negative response. The design and layout of the existing 220,000 square foot building is not satisfactory to attract a single major retailer to this location.

C. ALTERNATIVE THREE: OFFICE USE AND MINIMUM GROUND LEVEL RETAIL USE

1. Description

This alternative would provide 6,000 gross square feet (gsf) of retail space at the ground floor level along the building's Market Street frontage, respecting the retail requirements for the C-3-R (Downtown Retail) District. About 214,000 gsf of the 220,000-square-foot building would be rehabilitated into office space and the building's services would conform to current seismic safety and building code standards as in the proposed project. This amount of office space represents a 47% increase over the proposed project and a 93% decrease in retail space.

2. Impacts

The building's exterior appearance would be the same as the proposed project as well as for Alternative 2, as ground floor retail would be proposed for both.

The majority of the building would be used as office space. Increasing the office space by 47% and reducing retail space by 93% would decrease pedestrian trips. More office use

would generate approximately 7% fewer daily trips and 7% fewer peak-hour trips compared to the proposed project. This alternative would also result in less energy consumption. Air quality impacts would be slightly less than the proposed project. Housing demand would increase to 173 units, 61 more than the 112 units generated by the proposed project, calculated pursuant to the OHPP formula.

3. Reasons for Rejection

The project sponsor has rejected this alternative because it does not meet the following objectives:

- Provision of uses in a mix that effectively utilizes building configuration
- Revitalization of retail activity at the southwest corner of Fifth and Market Streets
- Rehabilitation of large floor office space in an architecturally significant commercial building (above 25,000 gross square feet per floor)
- Creation of a focal point to attracts tourists and City residents to the central Market Street area
- Provision of office and retail uses at an important transportation node
- Earn a reasonable rate of return on the investment.

The C-3-R (Downtown Retail) District is described as a "regional center for comparison shopper retailing and direct consumer services." The provision of a minimum amount of retail space does not satisfy the project sponsor's development objectives of providing major retail uses at this location, nor does it comply with the intent of the C-3-R district.

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DEPARTMENT OF CITY PLANNING 450 McAllister St. - 5th Floor
(415)558-5260

NOTICE THAT AN ENVIRONMENTAL IMPACT REPORT IS DETERMINED TO BE REQUIRED

Date of this Notice: January 13, 1984

Lead Agency: City and County of San Francisco, Department of City Planning
450 McAllister St. - 5th Floor, San Francisco CA 94102

Agency Contact Person: Sally E. Maxwell **Tel:** (415) 558-5260

Project Title: 83.404E: 901 Market Street Rehabilitation **Project Sponsor:** The Lurie Company

Project Contact Person: Eugene L. Valla

Project Address: 901 Market Street at Fifth Street

Assessor's Block(s) and Lot(s): Assessor's Block 3704, Lots 1 and 62

City and County: San Francisco

Project Description: Remodel an "A" architecturally rated, vacant, six-story, 220,000 square-foot retail building by converting 122,000 square feet into offices and constructing 5,000 square feet of offices, resulting in a total of 145,000 square feet of offices and 80,000 square feet of retail space, after demolishing 1,000 square feet of space.

THIS PROJECT MAY HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT AND AN ENVIRONMENTAL IMPACT REPORT IS REQUIRED. This determination is based upon the criteria of the Guidelines of the State Secretary for Resources, Sections 15081 (Determining Significant Effect), 15082 (Mandatory Findings of Significance) and 15084 (Decision to Prepare an EIR), and the following reasons, as documented in the Initial Evaluation (initial study) for the project, which is on file at the Department of City Planning:

The project could have a potentially significant effect on housing demand, cumulative transportation and circulation, cumulative air quality, and energy demand.

Deadline for Filing of an Appeal of this Determination to the City Planning Commission: January 23, 1984.

An appeal requires 1) a letter specifying the grounds for the appeal, and 2) a $35.00 filing fee.

Allen I. Bash

Alec S. Bash, Environmental Review Officer

ER5 6/80

FINAL INITIAL STUDY
901 MARKET STREET REHABILITATION
NO. 83.404E
January 13, 1984

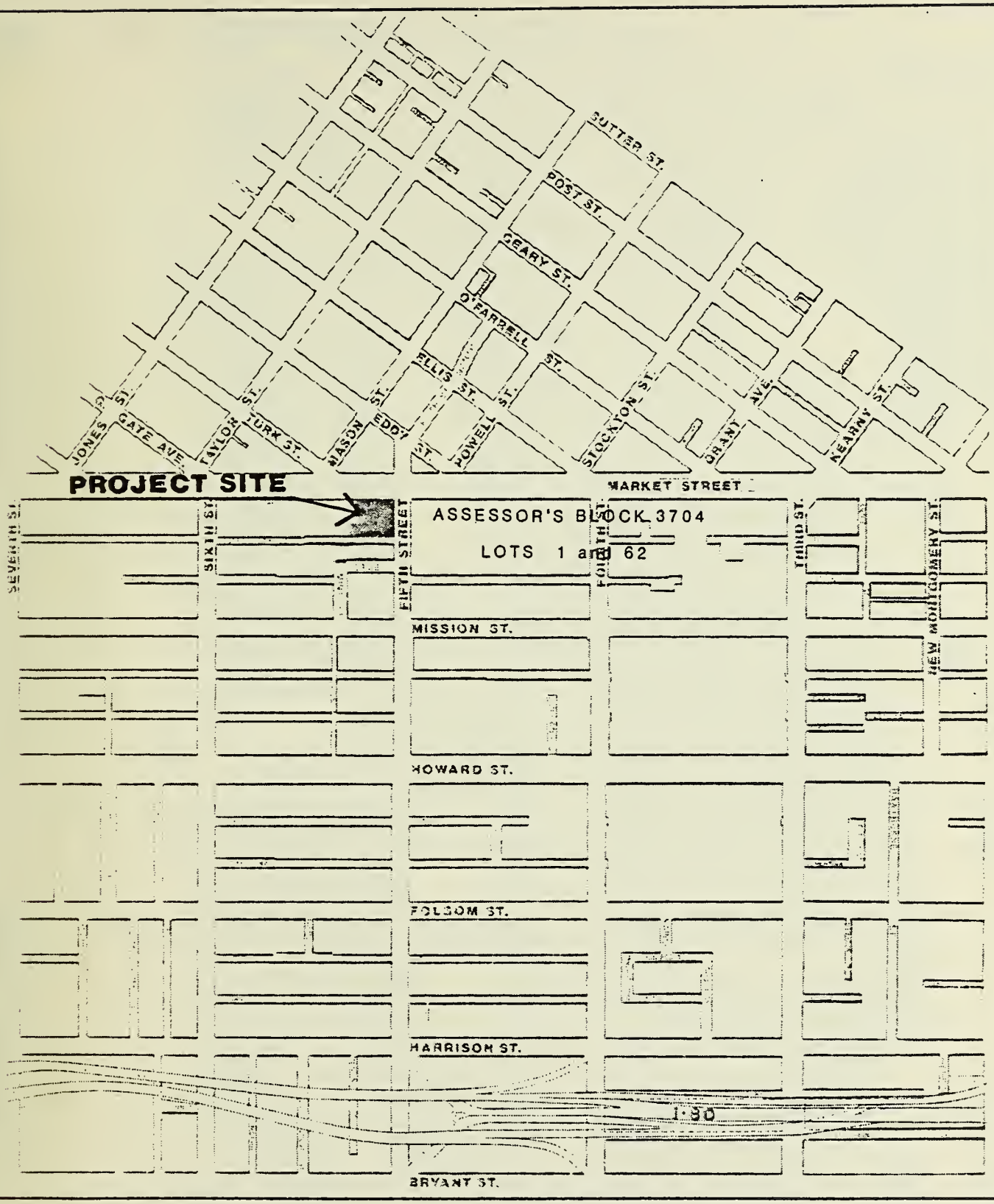
I. PROJECT DESCRIPTION

The 901 Market Street project would be the rehabilitation of the existing building on the site into retail and office space. The project site is located on Assessor's Block 3704, Lots 1 and 62 and contains 31,475 square feet. The site is in the C-3-R (Downtown Retail) district, southwest of Union Square, on the southwest corner of Fifth and Market Streets and north of Stevenson Street (Figure 1, page 2). It is also located southwest, across the Fifth and Market Street intersection, of Hallidie Plaza and the Powell Street Cable Car Turnaround.

The project site contains an existing six-story building, formerly used for retail and office uses. This structure is rated "A" by the Foundation for San Francisco's Architectural Heritage (Heritage)[1] and "4" by the Architectural Inventory of the Department of City Planning.[2] The building was formerly the Hale Brother's Department Store and, later, J.C. Penney's. This significant building would be rehabilitated, the building entrance restored, and a new office lobby and possibly a skylit five-story atrium added.

The project sponsor, The Lurie Company, intends to rehabilitate this six-story, 220,000-gross square-foot building, including a basement and mezzanine level, into retail and office space and to update its services to conform to current seismic, safety, and building code standards. The rehabilitated building would contain approximately 80,000 gsf of retail space and approximately 145,000 gsf of office space (Figures 2 and 3, pages 3 and 4). The additional approximately 5,000 gsf would result from alterations to the existing 6th floor.

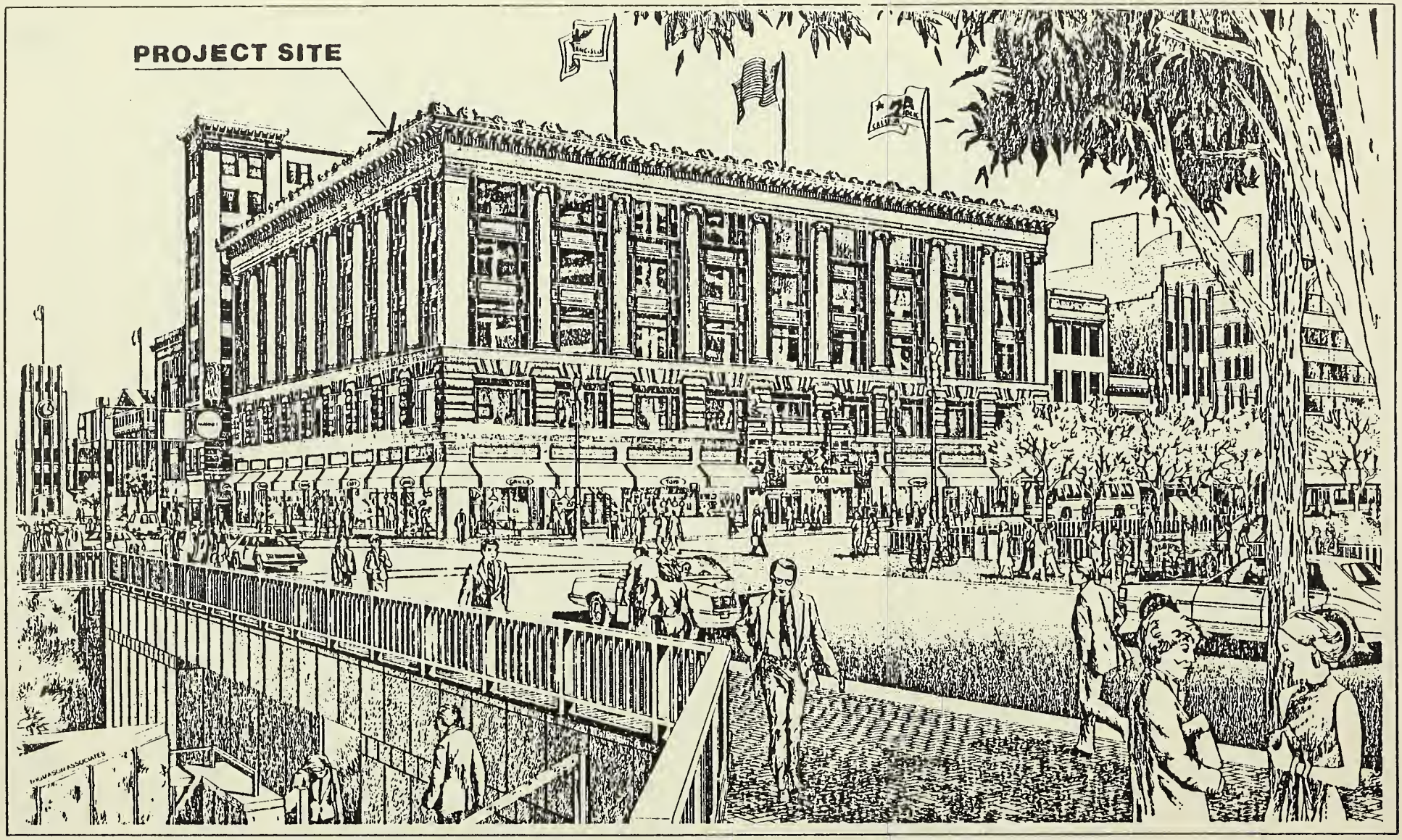
No off-street parking spaces are required for the proposed project under the Planning Code for a C-3-R district. None are proposed as part of the project. Pedestrian access to the proposed building would be from Market and Fifth Streets. Three loading docks would be added with access provided off Stevenson Street.



SCALE 0 450 900 1800 FEET

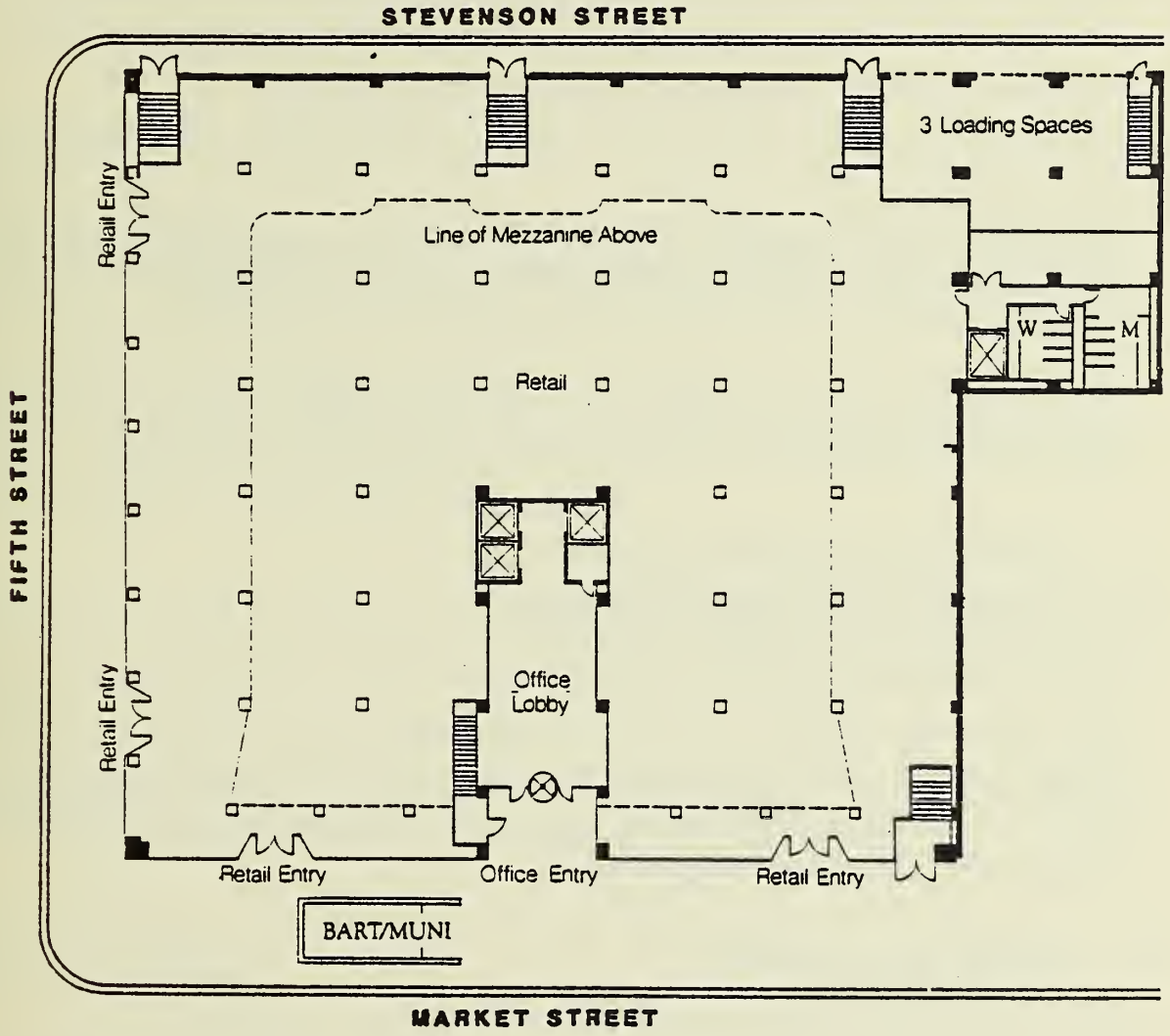
SOURCE: EIP CORPORATION

SITE LOCATION 1



SOURCE: GENSLER AND ASSOCIATES

BUILDING PERSPECTIVE **2**



SCALE 0 16 32 64 FEET

SOURCE: GENSLER & ASSOCIATES

GROUND LEVEL FLOOR PLAN 3

Estimated cost of construction for the project is $10,000,000. It is anticipated that construction would begin in the fall of 1984 and be completed in the fall of 1985.

The project architect is Gensler and Associates of San Francisco.

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[1]Foundation for San Francisco's Architectural Heritage, Splendid Survivors, California Living Books, 1979. Heritage is a non-profit volunteer historic preservation organization that has identified and documented significant San Francisco buildings.

[2]The Department of City Planning's rating system progresses from "5" to "1," with "1" being the least important in architectural or historic value. Buildings with a rating of "3" or higher represent the best two percent of the architecture in the City.

II. SUMMARY OF POTENTIAL EFFECTS

A. POTENTIALLY SIGNIFICANT EFFECTS

The 901 Market Street project is examined in this Initial Study to identify its potential effects on the environment. Some impacts, generated by the proposed project itself or cumulatively with other projects in the vicinity, could be potentially significant and will be analyzed in an EIR. These include housing demand; cumulative transportation and circulation; air quality; and energy demand.

B. INSIGNIFICANT EFFECTS

Some environmental effects would either be insignificant or potential impacts would be mitigated through measures incorporated into the project design. The following issues require no environmental analysis and will not be addressed in the EIR:

Visual Quality: No changes would occur with shadows or wind.

Cultural: Seismically updating the existing building would require installation of footings, however the activity would occur in areas where previous structures have been known to exist as early as 1869. The rehabilitation would upgrade a building considered significant by the Department of City Planning.

Land Use: The project is consistent with existing land use patterns.

Noise: Most of the rehabilitation construction would occur inside the building, and noise due to construction would not detectably increase existing noise levels. After completion, the project would not perceptibly increase noise in the project vicinity.

Project-Related Air Quality/Climate Impacts and Impacts From Odors/Burning of Materials: Construction and operation of the proposed project would not create objectionable odors, nor would the project involve burning any materials. Project operation would not violate any ambient air quality standard, expose any sensitive receptors to air pollutants or create any objectionable odors. The issues of cumulative air quality impacts will be discussed in the EIR.

Biology: The project would have no effect on plant or animal life because the site is currently covered by the 901 Market Street building.

Population: The project would not induce substantial growth. The building is currently vacant; the project would not displace any businesses. Housing demand will be analyzed in the EIR.

Utilities/Public Services: Increased demand for public services and utilities attributable to the proposed project would not require additional personnel or equipment.

Geology/Topography: The rehabilitation of the building would meet current seismic and building code standards.

Water: There is no surface water at the site. The site is impervious, covered by the existing building. The proposed project would not alter this situation.

Hazards: The proposed project would not create hazardous uses or health hazards in the area, nor would there be a potential for health hazard. An evacuation and emergency response plan would be developed by the project sponsor as part of the project.

III. ENVIRONMENTAL SETTING

A. COMPATIBILITY WITH EXISTING ZONING AND PLANS

Could the project:

		Yes	No	Discussed
1.	Require a variance, special authorization, or change to the City Planning Code or Zoning Map?	___	X	X
*2.	Conflict with the Comprehensive Plan of the City and County of San Francisco?	___	X	X
*3.	Conflict with any other adopted environmental plans and goals of the City or Region?	___	X	X

The project would be subject to discretionary review by the City Planning Commission pursuant to resolution number 8474, adopted July 17, 1980. The compatibility of the proposed project with specific goals in the Comprehensive Plan will be discussed in the EIR. The project would not conflict with adopted environmental plans and goals of the City and region.

B. ENVIRONMENTAL EFFECTS

		Yes	No	Discussed
1.	Land Use. Could the project:			
*a.	Disrupt or divide the physical arrangement of an established community?	___	X	X
b.	Have any substantial impact upon the existing character of the vicinity?	X	___	X

The project site is located in the C-3-R (Downtown Retail) District and a 160-G height and bulk district. This area is characterized by department stores, hotels, office and commercial buildings with ground floor retail, and restaurants. The existing 901 Market Street building would be returned to its former retail and office uses. The proposed mix of retail and office uses in the rehabilitated structure would be similar to surrounding land uses to the north, west, east and along Market Street.

The project would renew retail activity at this location, and the proposed rehabilitation of the existing building would make a positive contribution to the physical character of the area.

	Yes	No	Discussed
2. Visual Quality. Could the project:			
*a. Have a substantial, demonstrable negative aesthetic effect?	___	X	X
b. Substantially degrade or obstruct any scenic view or vista now observed from public areas?	___	X	X
c. Generate obtrusive light or glare substantially impacting other properties?	___	X	___

Rehabilitating the existing building, which is rated as architecturally significant, would not have a negative aesthetic effect. It would not degrade the view of the project site corner from Hallidie Plaza, from the Powell Street Cable Car Turntable, and along Market Street. No new structures would be constructed; therefore, the project would not degrade or block any views from public areas. Reflective glass would not be used in the project; therefore, no obstrusive light or glare would affect other properties. These issues require no further analysis in the EIR.

	Yes	No	Discussed
3. Population. Could the project:			
*a. Induce substantial growth or concentration of population?	___	X	X
*b. Displace a large number of people (involving either housing or employment)?	___	X	X
c. Create a substantial demand for additional housing in San Francisco, or substantially reduce the housing supply?	___	X	X

The project building was used in the past as retail and office space. After rehabilitation, 901 Market would continue to contain approximately 80,000 gross square feet of space for retail use. About 121,000 gross square feet of former retail space would be converted to office use. About 19,000 gsf of former office space would continue to be used as office

* Derived from State Environmental Guidelines, Appendix G, normally significant impacts.

space and approximately 5,000 gsf of new office space would be added by alterations to the existing sixth floor. The existing structure is vacant; therefore, no loss of on-site employment would result from the project.

The project would accommodate approximately 830 permanent new jobs on the site of which approximately 230 would be retail, 580 office and 20 security, janitorial and maintenance. In addition to these permanent jobs, the project would generate about 150 person-years of construction labor.

The jobs generated by the proposed project would create additional Bay Area employment through a multiplier effect. Assuming that the new jobs created as a result of the project were primarily in the finance, insurance, and real estate industries, about 646 additional jobs in other sectors of the Bay Area economy could result.

The project would not be expected to significantly induce growth. The amount of net new office space in the project would represent 0.2% of the existing 60 million square feet of office space and 0.6% of the 18.9 million net new gross square feet of cumulative net new office space currently under construction (4.8 million square feet), approved (4.7 million square feet), under formal review (3.3 million square feet), or built but not occupied (6.1 million square feet) in the downtown or South of Market area as of September 15, 1983. More than 1.5 million square feet of office space was absorbed annually in the downtown between 1977 and 1982.

If all 18.9 million square feet of office space were to be completed and occupied by 1990, there could be a short-term cumulative impact of oversupply while the market adjusts itself to absorb the new space. During this period, commercial rents would be expected to decline, especially in the core of the downtown area, and vacancy rates would rise. The number of proposed new office developments could decline if there were not sufficient demand for office space presently planned or under construction, combined with office space that would become available due to existing leases about to expire. As a result, the project would not be expected to significantly alter business location patterns in San Francisco. These issues will not be discussed in the EIR. The creation of the new jobs on the site could generate additional demand for housing in San Francisco. This will be discussed in the EIR.

	Yes	No	Discussed
4. Transportation/Circulation. Could the project:			
*a. Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system?	___	X	X
b. Interfere with existing transportation systems, causing substantial alterations to circulation patterns or major traffic hazards?	___	X	X
c. Cause a substantial increase in transit demand which cannot be accommodated by existing or proposed transit capacity?	___	X	X
d. Cause a substantial increase in parking demand which cannot be accommodated by existing parking facilities?	___	X	X

The proposed project would not cause a measurable effect on intersection service levels or on regional highways. It could add incrementally to the cumulative demand for transit, parking and existing transportation systems. Further discussion on cumulative impacts for transit, parking and circulation will appear in the EIR.

	Yes	No	Discussed
5. Noise. Could the project:			
*a. Increase substantially the ambient noise levels for adjoining areas?	___	X	X
b. Violate Title 25 Noise Insulation Standards, if applicable?	___	X	___
c. Be substantially impacted by existing noise levels?	___	X	___

The project site is adjacent to thoroughfares with noise levels of about 70 Ldn (day/night weighted average). Also, noise levels along Fifth and Market Streets consistently exceed 85 dBA when buses and trucks pass by. Most of the rehabilitation construction would occur inside the building at about 85 dBA which would measure below 70 dBA outside of the building on the streets around the project. This noise due to construction would

not detectably increase existing noise levels. The project does not contain a parking facility; therefore, there would be no detectable increase in noise levels associated with project-related traffic.

6. Air Quality/Climate. Could the project:	Yes	No	Discussed
*a. Violate any ambient air quality standard or contribute substantially to an existing or projected air quality violation?	___	X	X
*b. Expose sensitive receptors to substantial pollutant concentrations?	___	X	___
c. Permeate its vicinity with objectionable odors?	___	X	___
d. Alter wind, moisture or temperature (including sun shading effects) so as to substantially affect public areas, or change the climate either in the community or region?	___	X	X

Based upon past analysis of a rehabilitation project of this size, its construction and operation would not violate any ambient air quality standard or create objectionable odors. If construction activities (e.g., sidewalk repair, building sandblasting) generated dust emissions from the action of wind over exposed earth surfaces these could be reduced about 50% with twice daily watering of exposed earth surfaces. (See Mitigation Measure, page 18.) The rehabilitation project would not add any new shadows onto any public area. Cumulative air quality impacts will be discussed in the EIR.

7. Utilities/Public Services. Could the project:	Yes	No	Discussed
*a. Breach published national, state or local standards relating to solid waste or litter control?	___	X	___
*b. Extend a sewer trunk line with capacity to serve new development?	___	X	___
c. Substantially increase demand for schools, recreation or other public facilities?	___	X	___
d. Require major expansion of power, water, or communications facilities?	___	X	___

The project would incorporate more extensive fire protection measures than existing older buildings in the area because of more stringent code standards now in effect. Refurbished buildings must conform to Life Safety Provisions of the San Francisco Building Code which requires automatic fire sprinklers, a fire alarm system, and emergency power and special elevator controls. The project would not require more fire department personnel or equipment. Water for fighting fires would be available to the project from both the domestic and high-pressure water systems. Water flow and pressure are adequate to serve the project. Cumulative development and approval of projects in the downtown and South of Market area may at some point require establishment of a new fire station.[1]

The project site is within the Southern Station's police district. The site area is patrolled by radio-dispatched patrol cars 24 hours a day. The proposed development would increase property and the daytime population on the site, thus eliminating the problems associated with an underpopulated corner. Additional personnel or equipment would not be required by the police department due to the project.[2]

There would be a net increase in the consumption of energy. The project would conform to California energy standards.

There would be an increase in demand for communication systems. Pacific Telephone Company would make any improvements necessary in order to provide adequate service to the site.[3]

The development would result in water consumption at the site of approximately 40,000 gallons per day (gpd). The existing eight-inch water main on Stevenson Street would serve the proposed project.[4] It is anticipated that the City could accommodate water needs of the proposed project.

The amount of wastewater generated by the project would be about the same as the water consumed. There is a five-foot, three-inch sewer on Fifth Street which is adequate to accommodate wastewater generated by the project.[5]

The proposed project would generate about 1.5 tons of solid waste per workday. The Golden Gate Disposal Company would remove solid waste and does not anticipate problems in meeting the demand generated by the proposed development. Solid waste is

disposed of at Altamont in Alameda County. The disposal company encourages the use of trash compactors to reduce the indirect transportation impacts associated with disposal of waste.[6]

A reduction in enrollment has been experienced in San Francisco's public schools. The school district could accommodate any increase in school-aged children generated by the project.[7]

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[1]Edward J. Phipps, Assistant Chief, Support Services, San Francisco Fire Department, letter communication, June 1, 1983.

[2]Hal Waterman, Planning and Research Division, San Francisco Police Department, telephone communication, June 30, 1983.

[3]Leo Ladner, Engineering, Pacific Telephone, telephone conversation, September 19, 1983.

[4]Cy Wentworth, Water Estimator, San Francisco Water Department, City Distribution Division, telephone communication, September 16, 1983.

[5]Nathan Lee, Engineering Associate II, Bureau of Sanitary Engineering, telephone communication, September 15, 1983.

[6]Fiore Garbarino, Office Manager, Golden Gate Disposal Company, telephone communication, August 17, 1983.

[7]San Francisco Unified School District, Proposal for Leasing and Selling Vacant Property, April 29, 1980, pp. 28 and 29.

	Yes	No	Discussed
8. Biology. Could the project:			
*a. Substantially affect a rare or endangered species of animal or plant or the habitat of the species?	___	X	X
*b. Substantially diminish habitat for fish, wildlife or plants, or interfere substantially with the movement of any resident or migratory fish or wildlife species?	___	X	___
c. Require removal of substantial numbers of mature, scenic trees?	___	X	___

The project site is totally covered by the existing building. There are no rare or endangered species of plant or animal habitats on site. These matters do not require further discussion in the EIR.

	Yes	No	Discussed
9. Geology/Topography. Could the project:			
*a. Expose people or structures to major geologic hazards (slides, subsidence, erosion and liquefaction)?	___	X	X
b. Change substantially the topography or any unique geologic or physical features of the site?	___	X	X

The project site is approximately level at elevation +22 feet, San Francisco Datum (SFD).[1,2] According to the geologic map of San Francisco, the area is underlain by dune sand, bay mud, undifferentiated sediments (sand and clay) and bedrock at about -183 feet SFD.[3] Test borings from the southeast corner of the 5th/Market Streets intersection indicate rubble fill to elevation 0 feet SFD, underlain by 1 foot of dune sand, 12 feet of firm to medium dense clayey sand and silt layers, 77 feet of dense sand and 87 feet of firm clayey sands soil.[4] Bedrock was encountered at -177 feet SFD.[4] Groundwater probably would be found at about 20 feet below ground surface (0 feet SFD).[4] The project area would experience strong to very strong groundshaking during a great earthquake (Richter Magnitude 8+) along the San Andreas Fault.[5]

The proposed project would not expose people or structures to a major geologic hazard or substantially alter the topography of the site. The building would be rehabilitated under the supervision of a California licensed engineer and would meet current seismic safety and building code standards. These matters do not require further discussion in the EIR.

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[1]San Francisco Datum is approximately 8.6 feet above mean sea level.

[2]Site visit by EIP geologist G.J. Burwasser, September 22, 1982.

[3]J. Schlocker, Geology of San Francisco North Quadrangle, California, U.S. Geological Survey, Prof. Paper 782, U.S. Government Printing Office, Washington, D.C., 1974, plate 1 (scale 1:24,000), page 88, Table 2, pages 66, 83, 84, 91, 97, 99.

[4]Lee and Praszker, Consulting Civil Engineers, Preliminary Geotechnical and Foundation Investigation Report for Fifth and Market Streets Project, San Francisco, October 1983, page 4.

[5]URS/John A. Blume and Associates, San Francisco Seismic Safety Investigation, San Francisco, California, June 1974, Figure 3.

	Yes	No	Discussed
10. Water. Could the project:			
*a. Substantially degrade water quality, or contaminate a public water supply?	___	X	___
*b. Substantially degrade or deplete ground water resources, or interfere substantially with ground water recharge?	___	X	X
*c. Cause substantial flooding, erosion or siltation?	___	X	___

There is no surface water at the site. The site is currently impervious, covered by an existing building. The proposed project would not alter this situation. Runoff would continue to drain into the combined City storm/sewer system. These matters require no further discussion in the EIR.

	Yes	No	Discussed
11. Energy/Natural Resources. Could the project:			
*a. Encourage activities which result in the use of large amounts of fuel, water, or energy, or use these in a wasteful manner?	___	X	X

	Yes	No	Discussed
b. Have a substantial effect on the potential use, extraction, or depletion of a natural resource?	___	X	___

Previous analysis for other projects indicates that mixed retail and office buildings generally are not high energy consumers. The project would not encourage wasteful energy-related activities or have a substantial effect on the depletion of a natural resource. The project would conform to Title 24 of the California Administrative Code. Energy demand will be discussed in the EIR.

12. Hazards. Could the project:	Yes	No	Discussed
*a. Create a potential public health hazard or involve the use, production or disposal of materials which pose a hazard to people or animal or plant populations in the area affected?	___	X	___
*b. Interfere with emergency response plans or emergency evacuation plans?	___	X	X
c. Create a potentially substantial fire hazard?	___	X	X

An evacuation and emergency response plan would be developed as part of the proposed project (see D., Mitigation Measures, page 18). The project's emergency plan would be coordinated with the City's emergency planning activities. The project would not create a substantial fire hazard because it is an existing building and would incorporate more extensive fire protection measures than it presently contains or than most other existing buildings in the area to comply with more stringent code standards now in effect. These issues will need no further discussion in the EIR.

13. Cultural. Could the project:	Yes	No	Discussed
*a. Disrupt or adversely affect a prehistoric or historic archaeological site or a property of historic or cultural significance to a community or ethnic or social group; or a paleontological site except as a part of a scientific study?	___	X	X

*b. Conflict with established recreational, educational, religious or scientific uses of the area?	___	X	___
c. Conflict with preservation of any buildings of City landmark quality?	___	X	X

Seismically updating the building would require installation of footings. This construction activity would involve excavation in areas where previous structures have been known to exist as early 1869. The original excavation of the building was done in 1912. No cultural resources are expected to be encountered. However, the project sponsor has included a mitigation measure as part of the project in the event that cultural resources are encountered during installation of footings (see Mitigation Measures, page 18).

The existing structure at 901 Market has been rated "A" in Splendid Survivors[1] and "4" by the Department of City Planning's architectural survey.[2] It is also included on the Department of City Planning's List of Architectural and/or Historically Significant Buildings (adopted by City Planning Commission as Resolution 8600).

Rehabilitation of the structure would have a beneficial impact on a building of such significant architectural value to the City. The rehabilitation would include the redesign of the building lobby and a restored building entrance. These issues require no further discussion in the EIR.

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[1] An "A" (important) rating indicates the building, individually, is an outstanding example of architectural and historic qualities in downtown San Francisco as noted on page 12 of Splendid Survivors, Foundation for San Francisco's Architectural Heritage, California Living books, 1979.

[2] The Department of City Planning's rating system progresses from "5" to "1" with "1" being the least important in architectural or historic value.

C. OTHER	Yes	No	Discussed
Require approval of permits from City Departments other than DCP or BBI, or from Regional, State or Federal Agencies?	___	X	___

D. MITIGATION MEASURES

	Yes	No	N/A	Discussed
1. If any significant effects have been identified, are there ways to mitigate them?	___	X	___	X
2. Are all mitigation measures identified above included in the project?	___	___	X	X

No project-specific significant effects have been identified to date, although there are cumulative impacts associated with retail/office growth in San Francisco. Below are mitigation measures that are included as part of the project. Additional mitigation measures will be included in the EIR.

MITIGATION MEASURES INCLUDED AS PART OF THE PROJECT:

1. HAZARDS

An evacuation and emergency response plan would be developed by the project sponsor or building management staff, in consultation with the Mayor's Office of Emergency Services, to ensure coordination between the City's emergency planning activities and the project's plan and to provide for building occupants in the event of an emergency. The project's plan would be reviewed by the Office of Emergency Services and implemented by building management insofar as feasible before issuance of final building permits by the Department of Public Works.

2. HISTORIC AND CULTURAL RESOURCES

Should evidence of cultural or historic artifacts of significance be found during project excavation, the Environmental Review Officer and the President of the Landmarks Preservation Advisory Board would be notified. The project sponsor would select an archaeologist or other expert to help the Office of Environmental Review determine the significance of the find and whether feasible measures, including appropriate security measures, could be implemented to preserve or recover such artifacts. The Environmental Review Officer would then recommend specific mitigation measures, if necessary, and recommendations would be sent to the State Office of Historic Preservation. Excavation or construction which might damage the discovered cultural resources would be suspended for a maximum of four weeks to permit inspection, recommendation and retrieval, if appropriate.

3. AIR QUALITY

The California Health and Safety Code requires that measures be taken to minimize dust generation; specifically, watering of demolition materials and soils. The project sponsor would require the contractor to implement a twice-daily watering program, which would reduce the likelihood of airborne construction dust and particulates exceeding state and federal standards. An effective watering program (complete coverage twice-daily) can reduce emissions by about 50%. Adjacent streets would be mechanically swept by the demolition and excavation contractors so that silt would not be washed into the storm drains and dust would be removed.

4. TRANSPORTATION

With respect to construction impacts, the project sponsor would ensure that safe and convenient pedestrian access would be maintained throughout the construction period on designated walkways around the project site. The delivery of equipment, materials, etc., would be assigned to Fifth Street and prohibited during the peak traffic flow periods (7:30-8:30 a.m. and 4:30-5:30 p.m.).

The project sponsor agrees to retain a transportation broker responsible for coordinating, implementing and monitoring programs among tenants and employees to encourage flextime transit use and ridesharing. Such programs would include but not be limited to the following: on-site sale of BART tickets, Muni Fast passes, and Golden Gate Transit Commute Books; establishment of employee carpool/vanpool system in cooperation with RIDES for Bay Area Commuters; existing shuttle bus services between the Transbay Terminal and employers in the project vicinity; and other such enterprises. A flexible time system for employee working hours would be encouraged by the project sponsor and management of the building.

E. ALTERNATIVES

The following alternatives to the proposed will be discussed in the EIR:

1. No Project

This alternative will discuss the conditions which would occur on the project site if the 901 Market Building were not rehabilitated.

2. Rehabilitation with all Retail Use

In this alternative, an analysis will be made of a project with all retail uses in the rehabilitated building.

3. Rehabilitation with Office Use and Minimum Ground-Level Retail Use

An analysis will be made of an alternative rehabilitation with office as the principle use and a minimum amount of ground-level retail space along Market Street.

F. MANDATORY FINDINGS OF SIGNIFICANCE	Yes	No	Discussed
*1. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	___	X	___
*2. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	___	X	___
*3. Does the project have possible environmental effects which are individually limited, but cumulatively considerable? (Analyze in the light of past projects, other current projects, and probable future projects.)	X	___	___
*4. Would the project cause substantial adverse effects on human beings, either directly or indirectly?	___	X	___
*5. Is there a serious public controversy concerning the possible environmental effect of the project?	___	X	___

G. ON THE BASIS OF THIS INITIAL STUDY:

_____ I find the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared by the Department of City Planning.

_____ I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because the mitigation measures, numbers _, in the discussion have been included as part of the proposed project. A NEGATIVE DECLARATION will be prepared.

__✓__ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Alec S. Bash
Environmental Review Officer

Alec S. Bash

for
Dean L. Macris
Director of Planning

Date: 1/12/83

DISTRIBUTION LIST

REGIONAL AGENCIES

Association of Bay Area Governments

Bay Area Air Quality Management District

California Arch. Site Inventory Regional Office

Calif. Dept. of Transportation Bus. & Trans. Agency

Calif. Dept. of Transportation Public Trans. Branch

Metropolitan Transportation Commission

CITY AND COUNTY OF SAN FRANCISCO

Landmarks Preservation Advisory Board

Bureau of Bldg. Inspection

San Francisco Water Department

San Francisco Committee for Utility Liaison on Construction and Other Projects (CULCOP)

Department of Public Works Traffic Engineering Division

San Francisco Fire Dept.

Municipal Railway Planning Division

Public Utilities Commission Energy Conservation

San Francisco Public Utilities Commission

San Francisco Real Estate Dept.

Economic Development Council

MEDIA

San Francisco Bay Guardian

San Francisco Chronicle

San Francisco Examiner

San Francisco Progress

The Sun Reporter

Tenderloin Times

KPOO

LIBRARIES

San Francisco Public Library

Cogswell College Library

EPA Library

Hastings College of the Law Library

Inst. of Govt. Studies

San Francisco State University

Government Documents Section, Stanford

GROUPS & INDIVIDUALS

American Institute of Architects

Bendix Environmental Research, Inc.

DKS Associates

Downtown Association

Downtown Senior Social Services

Environmental Science Associates

GROUPS & INDIVIDUALS (continued)

Heritage

Sue Hestor

David Jones

Carl Imparato

Kay Pachtner

Planning Analysis & Dev.

Mrs. G. Bland Platt

Charles Hall Page & Assoc.

San Francisco Chamber of Commerce

San Francisco Planning & Urban Research Association

San Franciscans for Reasonable Growth

San Francisco Tomorrow

John Sanger & Associates

Senior Escort Program

Tenants and Owners Development Corporation

Jeff Vance

Melba Yee

Whisler-Patri

ADJACENT PROPERTY OWNERS

John & Siew Yoong Yap Hung

National Dollar Stores

Jerome Doolan

SF Newspaper Federal Credit Union

Robert & Zoya Smithon

ADJACENT PROPERTY OWNERS (continued)

Rokuz Holding Corp.

CGRS Associates

Pickwick Assoc.

Dewdrop Investments

Bank of America

US Treasury, Old Mint

Rosemary & Eloise Shoong

Louis & Shirley Franco

Sam Kalman

Pacific Gas & Electric

Remedial Building Co.

Parrott Investment Co., c/o Carter Hawley Hale

Winokur, Schoenberg, et al.

Robert L. Coleman

San Francisco Unified School District

Kress Bldg. Partnership

The Lurie Company, 555 Calif. St.

John & Sally Chritton

The Lurie Company, c/o Plitt Theaters

Vallebh Patel

Parrott Investment Corp., 114 Sansome St.

James Watt & G. Lau

Mary Stebbins

APPENDIX B

TRANSPORTATION

TABLE B-1

PEDESTRIAN FLOW REGIMES

Flow Regime	Walking Speed Choice	Conflicts	Average Speed Rate (P/F/M)[1]
Open	Free Selection	None	0.5
Unimpeded	Some Selection	Minor	0.5 - 2.0
Impeded	Some Selection	High Indirect Interaction	2.0 - 6.0
Constrained	Some Restriction	Multiple	6.0 - 10.0
Crowded	Restricted	High Probability	10.0 - 14.0
Congested	All Reduced	Frequent	14.0 - 16.0
Jammed	Shuffle Only	Unavoidable	16.0+

[1] P/F/M - Pedestrians per foot of sidewalk width per minute.

Source: Boris Pushkarev and Jeffrey M. Zupan, Urban Space for Pedestrians, Massachusetts, MIT Press, 1975.

INTERSECTION ANALYSIS

The capacity analysis of each intersection at which a turning movement count was made utilized the "critical lane" method. This method of capacity calculation is a summation of maximum conflicting approach lane volumes that gives the capacity of an intersection in vehicles per hour per lane. (This method is explained in detail in an article entitled "Intersection Capacity Measurement Through Critical Movement Summations: A Planning Tool," by Henry B. McInerney and Stephen G. Peterson, January 1971, Traffic Engineering. This method is also explained in "Interim Materials on Highway Capacity," Transportation Research Circular No. 212, Transportation Research Board, January 1980). The maximum service volume for Level of Service E was assumed as intersection capacity. A service volume is the maximum number of vehicles that can pass an intersection during a specified time period in which operating conditions are maintained corresponding to the selected and specified Level of Service (see Table D-3). For each intersection analyzed, the existing peak-hour volume was computed and a volume-to-capacity (v/c) ratio was calculated by dividing the existing volume by the capacity at Level of Service E.

TABLE B-2

LEVELS OF SERVICE DEFINITIONS[1]
FOR SIGNALIZED INTERSECTIONS[1]

Level of Service A

Level of Service A describes a condition where the approach to an intersection appears quite open and turning movements are made easily. Little or no delay is experienced. No vehicles wait longer than one red traffic signal indication. The traffic operation can generally be described as excellent.

Level of Service B

Level of Service B describes a condition where the approach to an intersection is occasionally fully utilized and some delays may be encountered. Many drivers begin to feel somewhat restricted within groups of vehicles. The traffic operation can generally be described as very good.

Level of Service C

Level of Service C describes a condition where the approach to an intersection is often fully utilized and back-ups may occur behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so. The driver occasionally must have to wait more than one red traffic signal indication. The traffic operation can generally be described as good.

Level of Service D

Level of Service D describes a condition of increasing restriction causing substantial delays and queues of vehicles on approaches to the intersection during short times within the peak period. However, there are enough signal cycles with lower demand such that queues are periodically cleared, thus preventing excessive back-ups. The traffic operation can generally be described as fair.

Level of Service E

Capacity occurs at Level of Service E. It represents the most vehicles that any particular intersection can accommodate. At capacity there may be long queues of vehicles waiting upstream of the intersection and vehicles may be delayed up to several signal cycles. The traffic operation can generally be described as poor.

Level of Service F

Level of Service F represents a jammed condition. Back-ups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the approach under consideration. Hence, volumes of vehicles passing through the intersection vary from signal cycle to signal cycle. Because of the jammed condition, this volume would be less than capacity.

[1] City and County of San Francisco, Department of Public Works, Traffic Engineering Division.

TABLE B-3

PASSENGER LEVELS OF SERVICE ON BUS TRANSIT

	Volume/Capacity (v/c) Ratio*
Level of Service A	0.00-0.50
Level of Service A describes a condition of excellent passenger comfort. Passenger loadings are low with less than half the seats filled. There is little or no restriction on passenger maneuverability. Passenger loading times do not affect scheduled operation.	
Level of Service B	
Level of Service B is in the range of passenger comfort with moderate passenger loadings. Passengers still have reasonable freedom of movement on the transit vehicle. Passenger loading times do not affect scheduled operations.	0.51-0.75
Level of Service C	
Level of Service C is still in the zone of passenger comfort, but loadings approach seated capacity and passenger maneuverability on the transit vehicle is beginning to be restricted. Relatively satisfactory operating schedules are still obtained as passenger loading times are not excessive.	0.76-1.00
Level of Service D	
Level of Service D approaches uncomfortable passenger conditions with tolerable numbers of standees. Passengers have restricted freedom to move about on the transit vehicle. Conditions can be tolerated for short periods of time. Passenger loadings begin to affect schedule adherence as the restricted freedom of movement for passengers requires longer loading times.	1.01-1.25
Level of Service E	
Level of Service E passenger loadings approach manufacturers' recommended maximums and passenger comfort is at low levels. Freedom to move about is substantially diminished. Passenger loading times increase as mobility of passengers on the transit vehicle decreases. Scheduled operation is difficult to maintain at this level. Bunching of buses tends to occur which can rapidly cause operations to deteriorate.	1.26-1.50
Level of Service F	
Level of Service F describes crush loadings. Passenger comfort and maneuverability is extremely poor. Crush loadings lead to deterioration of scheduled operations through substantially increased loading times.	1.51-1.60

Source: Interim Materials on Highway Capacity, Transportation Research Circular 212, pages 73-113, Transportation Research Board, 1980.

TABLE B-4

TRAFFIC LEVELS OF SERVICE FOR FREEWAYS

	Volume/Capacity (v/c) Ratio*
Level of Service A Level of Service A describes a condition of free flow, with low volumes and high speeds. Traffic density is low, with speeds controlled by driver desires, speed limits, and physical roadway conditions. There is little or no restriction in maneuverability due to the presence of other vehicles, and drivers can maintain their desired speeds with little or no delay.	0.00-0.60
Level of Service B Level of Service B is in the higher speed range of stable flow, with operating speeds beginning to be restricted somewhat by traffic condltions. Drivers still have reasonable freedom to select their speed and lane of operation. Reductions in speed are not unreasonable, with a low probability of traffic flow being restricted.	0.61-0.70
Level of Service C Level of Service C is still in the zone of stable flow, but speeds and maneuverability are more closely controlled by the higher volumes. Most of the drivers are restricted in their freedom to select their own speed, change lanes or pass. A relatively satisfactory operating speed is still obtained.	0.71-0.80
Level of Service D Level of Service D approaches unstable flow, with tolerable operating speeds being maintained though considerably affected by changes in operating conditions. Fluctuations in volume and temporary restrictions to flow may cause substantial drops in operating speeds. Drivers have little freedom to maneuver, and comfort and convenience are low, but conditions can be tolerated for short periods of time.	0.81-0.90
Level of Service E Level of Service E cannot be described by speed alone, but represents operations at even lower operating speeds (typically about 30 to 35 mph) than in Level D, with volumes at or near the capacity of the highway. Flow is unstable, and there may be stoppages of momentary duration.	0.91-1.00
Level of Service F Level of Service F describes forced flow operation at low speeds (less than 30 mph), in which the freeway acts as storage for queues of vehicles backing up from a restriction downstream. Speeds are reduced substantially and stoppages may occur for short or long periods of time because of downstream congestion. In the extreme, both speed and volume can drop to zero.	1.00+

*Capacity is defined as level of Service E.

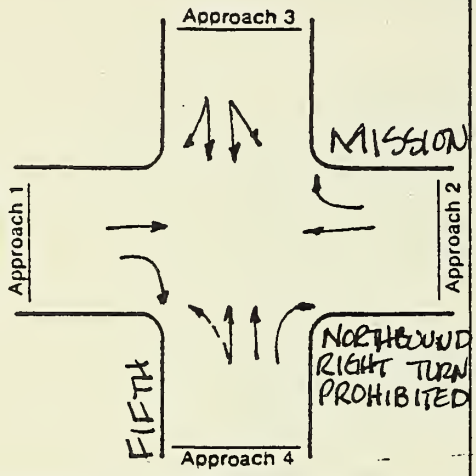
Source: Highway Capacity Manual, Special Report 87, Highway Research Board, 1965.

INTERSECTION CAPACITY ANALYSIS

Intersection FIFTH/MISSION Design Hour 4:30-5:30 P.M. PEAK HR.

Other Conditions EXISTING TRAFFIC (COUNTED 1/5/81)

1. Identify Lane Geometry



4. Left Turn Check

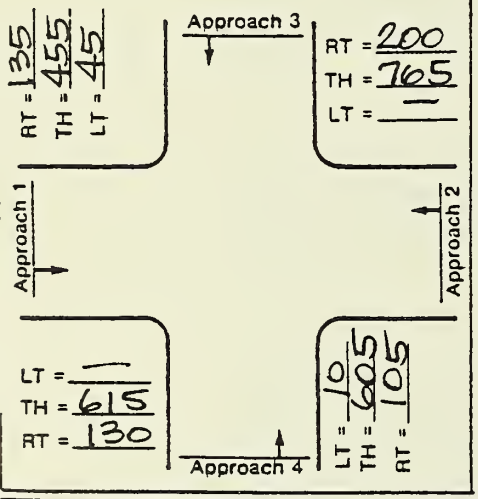
	Approach 1	2	3	4
a. Number of change intervals per hour				
b. Left turn capacity on change interval, in vph				
c. G/C Ratio				
d. Opposing volume in vph				
e. Left turn capacity on green, in vph				
f. Left turn capacity in vph (b + e)				
g. Left turn volume in vph				
h. Is volume > capacity (g > f)?				

6b. Volume Adjustment for Multiphase Signal Overlap

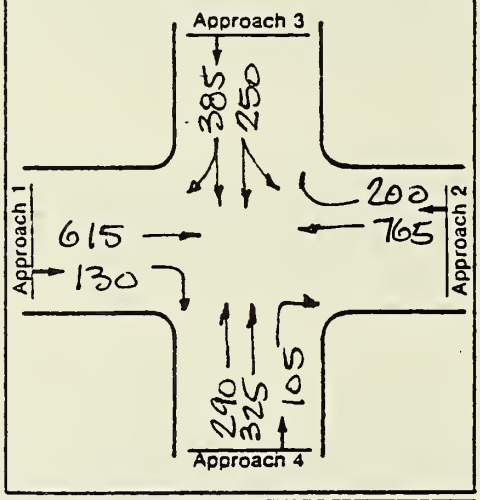
Probable Phase	Possible Critical Volume in vph	Volume Carryover to next phase	Adjusted Critical Volume in vph

2 ϕ

2. Identify Volumes, in vph



5. Assign Lane Volumes, in vph



7. Sum of Critical Volumes

765 + 385 + — + — .

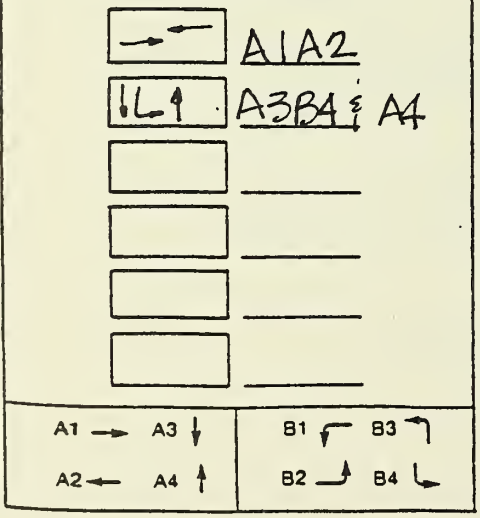
= 1150 vph

8. Intersection Level of Service

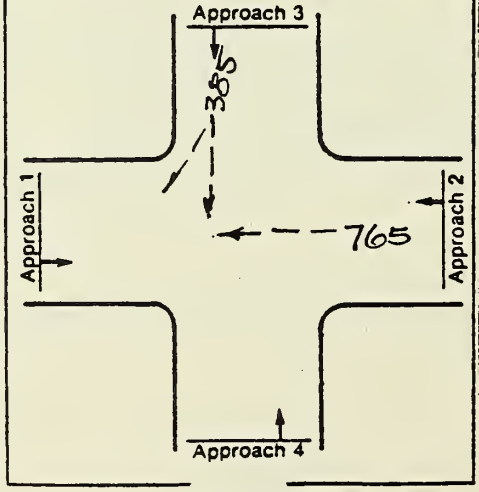
C

Notes:

3. Identify Phasing



6a. Critical Volumes, in vph (two phase signal)



Service Level Ranges

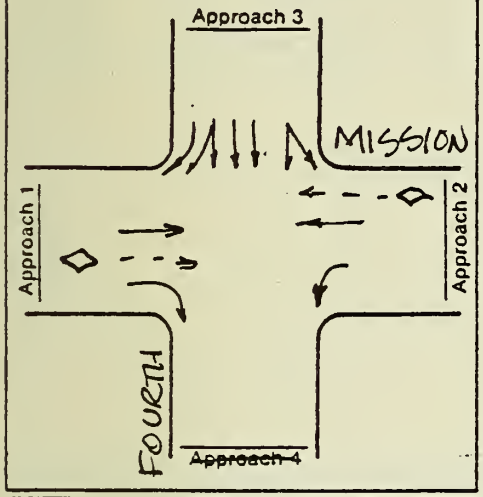
Level	Sum of Critical Volumes 2 Phase	3 Phase	4+ Phases
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	not applicable		

INTERSECTION CAPACITY ANALYSIS

Intersection MISSION / FOURTH Design Hour PM PEAK 4:30-5:30

Other Conditions EXISTING TRAFFIC (COUNTED 1/6/81)

1. Identify Lane Geometry



4. Left Turn Check

	Approach 1	2	3	4
a. Number of change intervals per hour				
b. Left turn capacity on change interval, in vph				
c. G/C Ratio				
d. Opposing volume in vph				
e. Left turn capacity on green, in vph				
f. Left turn capacity in vph (b + e)				
g. Left turn volume in vph				
h. Is volume > capacity (g > f)?				

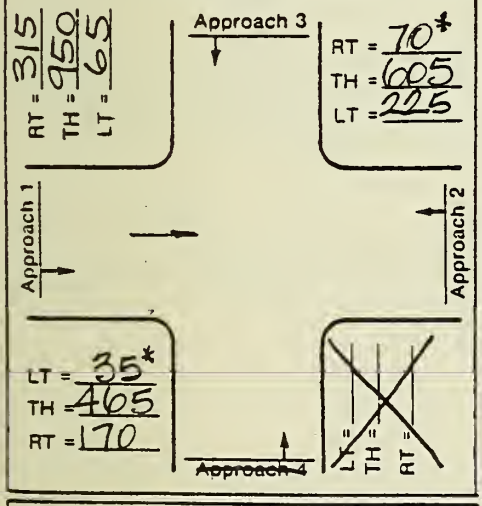
6b. Volume Adjustment for Multiphase Signal Overlap

Probable Phase	Possible Critical Volume in vph	Volume Carryover to next phase	Adjusted Critical Volume in vph

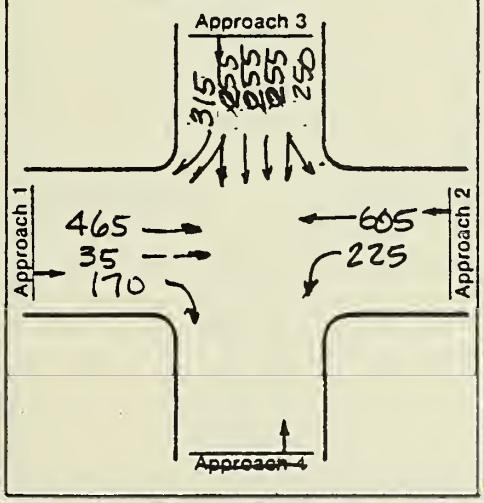
2φ

2. Identify Volumes, in vph

* BUSES ONLY



5. Assign Lane Volumes, in vph



7. Sum of Critical Volumes

465 + 315 + 225

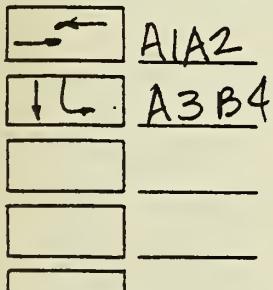
= 455 1005 vph

8. Intersection Level of Service

B

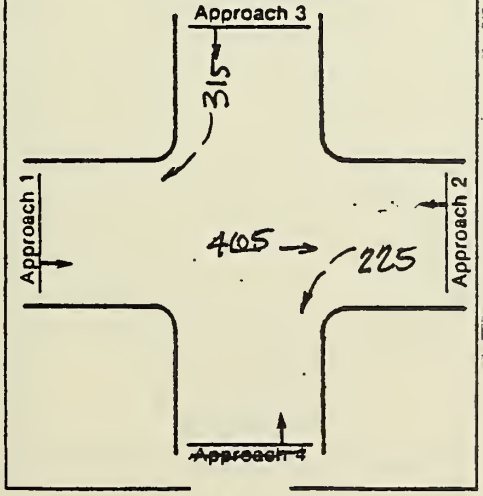
Notes:

3. Identify Phasing



A1 → A3 ↓	B1 ↰ B3 ↰
A2 ← A4 ↑	B2 ↱ B4 ↳

6a. Critical Volumes, in vph (two phase signal)



Service Level Ranges

Level	Sum of Critical Volumes 2 Phase	3 Phase	4+ Phases
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	not applicable		

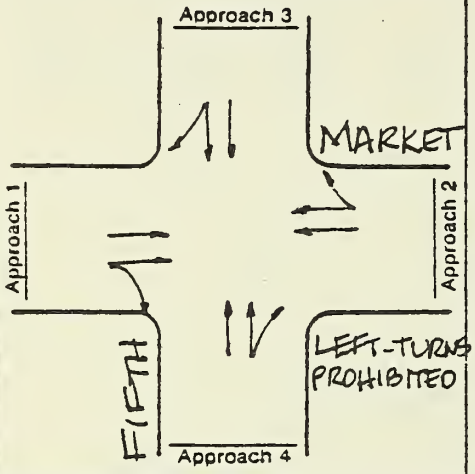
INTERSECTION CAPACITY ANALYSIS

4:30 - 5:30

Intersection MARKET / FIFTH Design Hour P.M. PEAK

Other Conditions EXISTING TRAFFIC (COUNTED 1/5/81)

1. Identify Lane Geometry



4. Left Turn Check

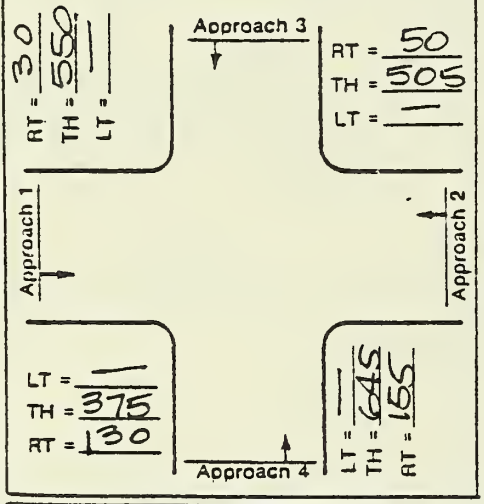
	Approach 1	2	3	4
a. Number of change intervals per hour				
b. Left turn capacity on change interval, in vph				
c. G/C Ratio				
d. Opposing volume in vph				
e. Left turn capacity on green, in vph				
f. Left turn capacity in vph (b + e)				
g. Left turn volume in vph				
h. Is volume > capacity (g > f)?				

6b. Volume Adjustment for Multiphase Signal Overlap

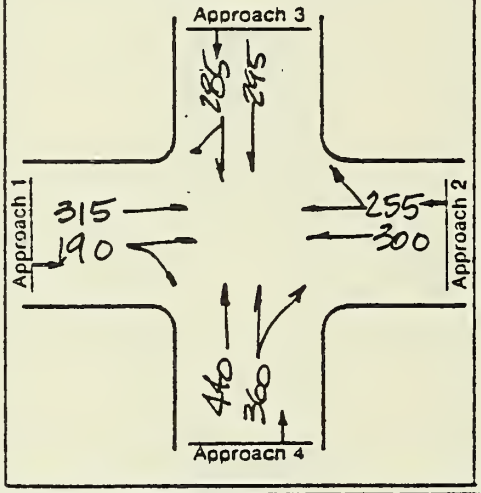
Probable Phase	Possible Critical Volume in vph	Volume Carryover to next phase	Adjusted Critical Volume in vph

2 ϕ

2. Identify Volumes, in vph



5. Assign Lane Volumes, in vph



7. Sum of Critical Volumes

440 + 315 + — + —

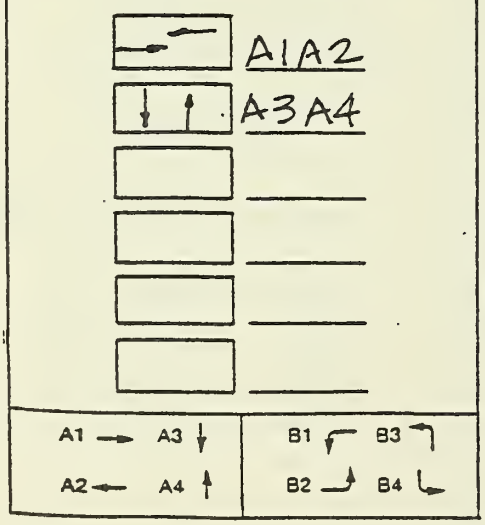
= 755 vph

8. Intersection Level of Service

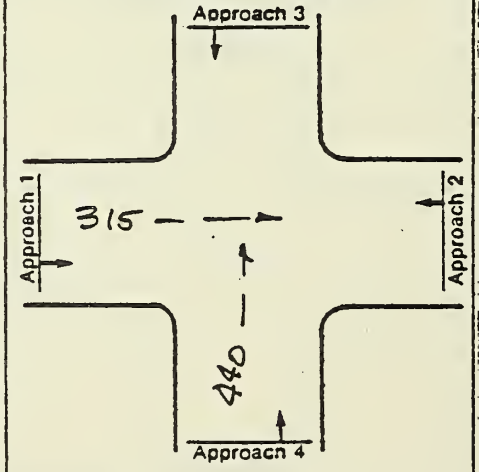
A

Notes:

3. Identify Phasing



6a. Critical Volumes, in vph (two phase signal)



Service Level Ranges

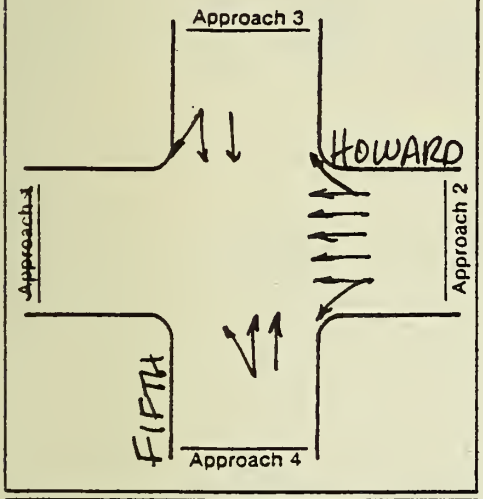
Level	Sum of Critical Volumes 2 Phase	3 Phase	4+ Phases
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	not applicable		

INTERSECTION CAPACITY ANALYSIS

Intersection HOWARD / FIFTH Design Hour 4:30-5:30 PM PEAK

Other Conditions EXISTING TRAFFIC (COUNTED 2/2/81)

1. Identify Lane Geometry



4. Left Turn Check

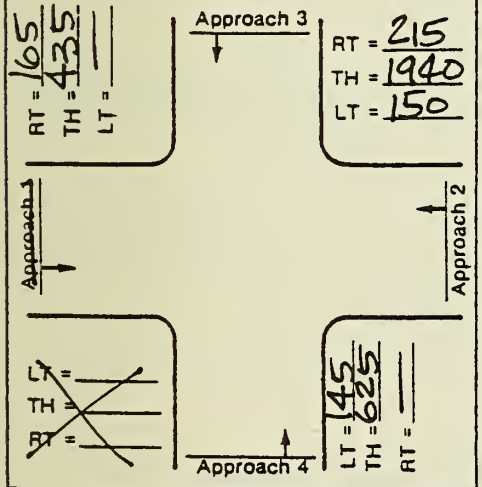
	Approach 1	2	3	4
a. Number of change intervals per hour				
b. Left turn capacity on change interval, in vph				
c. G/C Ratio				
d. Opposing volume in vph				
e. Left turn capacity on green, in vph				
f. Left turn capacity in vph (b + e)				
g. Left turn volume in vph				
h. Is volume > capacity (g > f)?				

6b. Volume Adjustment for Multiphase Signal Overlap

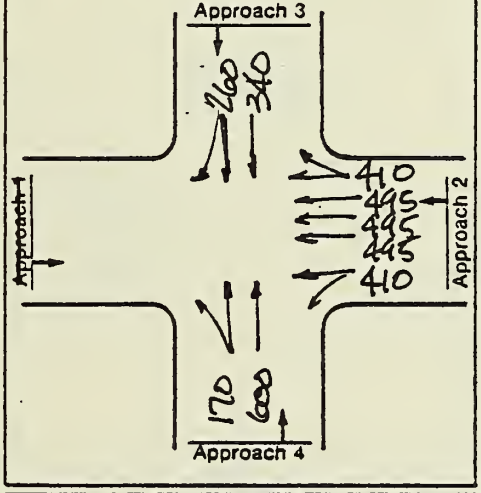
Probable Phase	Possible Critical Volume in vph	Volume Carryover to next phase	Adjusted Critical Volume in vph

2 ϕ

2. Identify Volumes, in vph



5. Assign Lane Volumes, in vph



7. Sum of Critical Volumes

600 + 495 + — + —

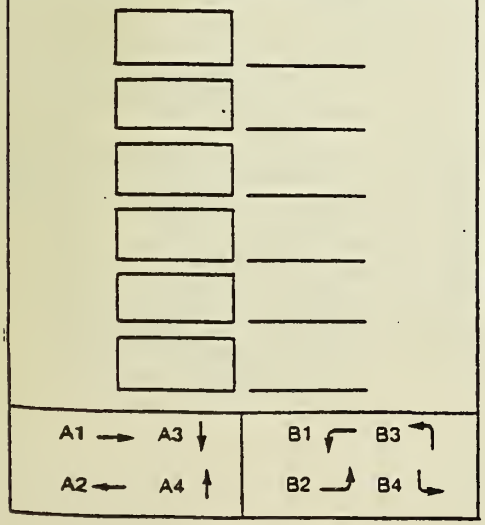
= 1095 vph

8. Intersection Level of Service

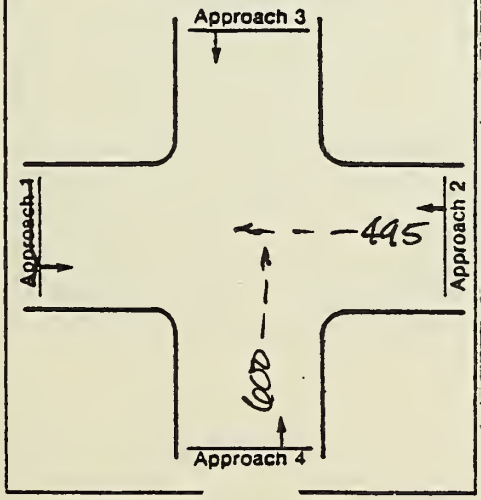
C

Notes:

3. Identify Phasing



6a. Critical Volumes, in vph (two phase signal)



Service Level Ranges

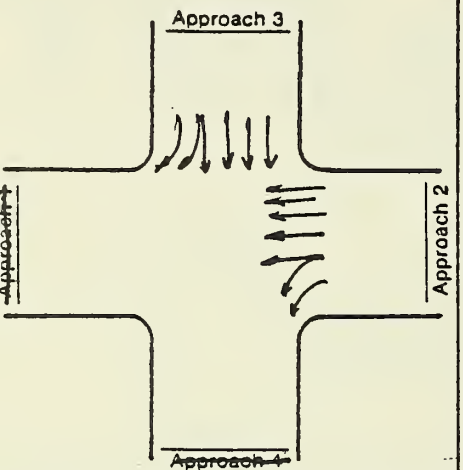
Level	Sum of Critical Volumes 2 Phase	3 Phase	4+ Phases
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	not applicable		

INTERSECTION CAPACITY ANALYSIS

Intersection HOWARD / FOURTH Design Hour 4:30-5:30 PM PEAK

Other Conditions EXISTING TRAFFIC (COUNTED 2/2/81)

1. Identify Lane Geometry



4. Left Turn Check

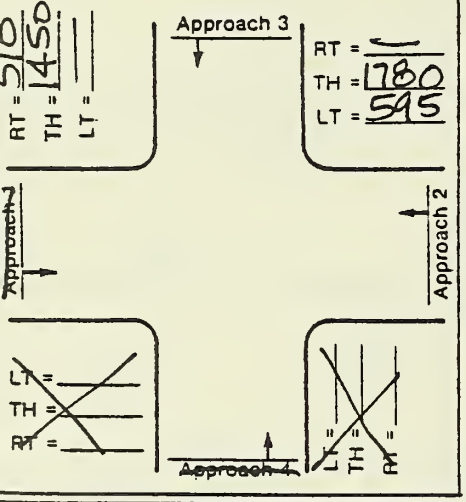
	Approach 1	2	3	4
a. Number of change intervals per hour				
b. Left turn capacity on change interval, in vph				
c. G/C Ratio				
d. Opposing volume in vph				
e. Left turn capacity on green, in vph				
f. Left turn capacity in vph (b + e)				
g. Left turn volume in vph				
h. Is volume > capacity (g > f)?				

6b. Volume Adjustment for Multiphase Signal Overlap

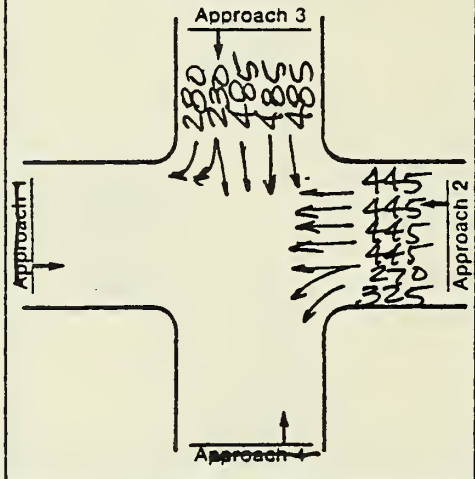
Probable Phase	Possible Critical Volume in vph	Volume Carryover to next phase	Adjusted Critical Volume in vph

2φ

2. Identify Volumes, in vph



5. Assign Lane Volumes, in vph



7. Sum of Critical Volumes

445 + 485 + — + —

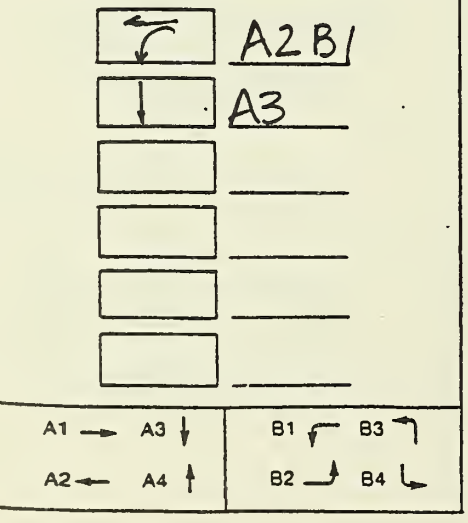
= 930 vph

8. Intersection Level of Service

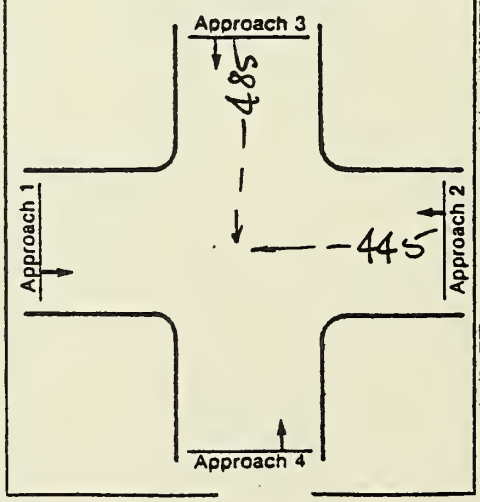
B

Notes:

3. Identify Phasing



6a. Critical Volumes, in vph (two phase signal)



Service Level Ranges

Level	Sum of Critical Volumes 2 Phase	3 Phase	4+ Phases
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	not applicable		

APPENDIX C
CUMULATIVE DEVELOPMENT

The list of office and retail projects shown in Table C-1 was prepared as a background document for a land use-based method of analyzing cumulative impacts. A land use-based cumulative analysis is one of the two methods of cumulative analyses suggested by the State CEQA Guidelines (Section 15130(b) (1) (A)), whereby a list of related projects is used to determine the combined effects of the whole and to determine the contribution of a proposed office or retail project to the overall cumulative effect. This is only one method of determining cumulative impacts. The other method of determining cumulative impacts is an analysis based on estimates of total employment projected for the area. This latter method is permitted by State Guidelines Section 15130(b) (1) (B) if the employment projections are based on an appropriate planning document.

The attached cumulative list is an expanded version of past lists and includes all office and large retail projects proposed, approved, under construction and recently completed in the greater downtown area which have active applications in the Department of City Planning. This list is appropriate for use only in a land-use based analysis of the cumulative impacts of office/retail projects in the greater downtown.

Relevant Redevelopment Agency projects have been included in the list. The Rincon Point/South Beach Redevelopment Area includes four projects: 77,000 square feet of office space at 181 Steuart Street, 200,000 square feet of office space on First Street, and a 30,000 square foot office building, all in at least preliminary negotiation stages between the Agency and potential developers; and 453,000 square feet of office space proposed by the U.S. Post Office at the Rincon Annex site (source: San Francisco Redevelopment Agency). The listing for the Yerba Buena Gardens in the YBC Redevelopment Area includes 1.2 million square feet of office space in the Olympia and York proposal (source: S.F. Redevelopment Agency). Other office buildings in the YBC and applicable parts of the Western Addition Redevelopment Areas are listed under individual

building names or addresses, based on information obtained from regular contact with Redevelopment Agency staff. Other jurisdictions are also contacted when the cumulative list is updated: the new 293,000-square-foot State Office Building under construction at Van Ness and McAllister is included; no Federal office space is proposed in downtown San Francisco in the near future other than that at the Rincon Annex Post Office site in the Rincon Point Redevelopment Area (John Scales, General Services Administration, telephone conversation, April 11, 1984).

Hotel projects have not been included in the list because hotel uses have different travel peaking characteristics from office buildings. They generally do not significantly affect peak-hour traffic or transit and therefore do not contribute to effects such as maximum production of air pollutants (see file No. EE81.61, 135 Main Final Supplemental EIR, certified November 30, 1982, page 150). Residential projects have not been included because the few residential structures in the study area and are unrelated to office uses. Residential travel in the downtown usually takes place in the contra-commute direction during peak hours and thus does not contribute to cumulative traffic or transit congestion. In addition, office trips in the p.m. peak period are assumed to be made by workers traveling to their residences. Trip generation calculated for residential uses includes persons returning to their homes after work in the p.m. peak period. Inclusion in the cumulative analysis of residential uses in downtown San Francisco would double count project-generated travel: once when employees left their office building and again when they arrived at their residence (if they lived in the downtown area).

Approximately 1.3 million square feet of office space is proposed for locations outside the greater downtown area. All but two of these projects (San Francisco Executive Park just east of U.S. 101 near the southern border of San Francisco, proposed for about 1.1 million square feet, and St. Mary's Medical Office Building on Shrader at Fulton, proposed to be about 90,000 square feet) are under 10,000 square feet. These projects are not included on the cumulative list because their impacts do not accumulate measurably with office space in the downtown area. Although the Executive Park proposal would contribute to auto traffic on U.S. 101, the critical analysis points for p.m. peak-period cumulative downtown traffic on U.S. 101 are the freeway entrances near downtown, the approaches to the Bay Bridge, and the Alemany interchange, which restricts southbound U.S. 101 traffic in the p.m. peak period. The Executive Park traffic would not contribute measurably to peak demands on freeway entrances near downtown or peak direction at

peak-period impacts on the Alemany interchange and is factored in as part of the traffic approaching the Bay Bridge before cumulative downtown development is added. (Executive Park DEIR, September 9, 1983. Note that an EIR was prepared in 1976 for a project on this site; following permits for four of the proposed office buildings, the developer made major changes in the project that necessitated the new EIR now in process.)

The Department's master project log contains listings for projects are no longer active for various reasons, such as no action by project sponsor in over one year, application withdrawn by sponsor, or project proposal revised to non-office or non-retail uses (examples of these projects include 272 Sutter, approximately 65,000 square feet withdrawn by sponsor; 2nd and Harrison, 49,000 square feet application revised from office space to parking lot). Some of these files have not been formally closed due to other higher staff priorities; however, the projects are not included on the cumulative list when staff concludes that the office project has been abandoned or withdrawn or the scope or nature of the proposal is so uncertain as to be not reasonably foreseeable.

In EIRs prepared during the latter half of 1983, the list used for cumulative analyses included a section labeled "Completed But Not in Base Case." As of the end of 1983, that list totaled over 6 million square feet of office space and about 225,000 square feet of retail space. These projects were included on earlier lists even though they were built and fully or partially occupied because some of the baseline data (measurements of the existing situation) for some transportation systems was collected in about mid-1982 and thus could not include the effects of these projects. The baseline has recently been updated to reflect 1984 for use in the Downtown Plan Draft EIR. Projects completed before 1984 are included in the updated baseline data. Using 1984 as the existing baseline situation means that projects completed by the end of 1983 should be omitted from the list of projects used for cumulative analyses in order to avoid counting the projects twice. Because some of the baseline data previously used was collected more recently than mid-1982, list-based cumulative analyses overestimated some reported impacts by measuring the effects of office buildings as part of the baseline existing situation and by including the same office building in the calculations of future cumulative impacts. For example, PG&E is already serving office buildings completed in 1982 and 1983; including those buildings in calculations of future cumulative energy demand would count them twice.

Therefore, for some parts of the cumulative analyses, omitting projects completed in 1983 will provide more realistic predictions of future conditions.

The Department is aware of a proposal for the Southern Pacific property near China Basin, called "Mission Bay." The application for environmental review for that project has been withdrawn; no other applications have been filed. The project is too speculative to analyze; intensity, density and types of uses have not yet been determined by the developer. Parts of the developer's original proposal would require major rezoning and amendment of the City's Comprehensive Plan. Further, two San Francisco Supervisors have proposed that the City acquire the property, and one neighborhood has prepared a development plan quite different from that withdrawn by the developer. Without more settled decisions about this property, it is not reasonably foreseeable to include it in the cumulative list analysis.

The Department of City Planning is in the process of preparing plans and environmental analyses for several areas in or near the downtown. Because these plans involve only proposals for zoning and other land use controls, they are not properly part of any cumulative list. Although analyses for these plans sometimes predict amounts of office space that could be built in the area being studied, the predictions are for purposes of assessing impacts of the plans and in no way reflect proposed future development.

Use of the Department's list for estimating cumulative impacts builds in certain limitations. It assumes, for example, that all proposals will be built at essentially the size proposed and that all buildings once built will be fully occupied. It is important to note that the cumulative list has not been adjusted to reflect temporary limitations on growth imposed by the City's actions to establish a Special Use District in the South of Market and a moratorium on new office and hotel space over 50,000. Nor has any adjustment been made to account for reduced building potential as proposed in the Downtown Plan (base FAR of 14:1 reduced to 10:1). Thus, the total square footages on the list of projects under formal review may be overestimated, and impacts based on the square footages may also be overestimated if some buildings are not built, not fully occupied or reduced in size.

APPENDIX C

TABLE C-1

CUMULATIVE DOWNTOWN OFFICE DEVELOPMENT IN SAN FRANCISCO
AS OF MARCH 10, 1984

PROJECTS UNDER FORMAL REVIEW

Assessor's Block	Case No.	Project Name	Office Gross Sq. Ft.		Retail Gross Sq. Ft.	
			Total New Construction	Net New Construction	Total New Construction	Net New Construction
59	83.177E	1620 Montgomery	82,270	45,390	---	---
110	82.129E	Embarcadero Terraces (1000 Front)	139,000	139,000	3,000	3,000
112	83.447E	1100 Sansome	55,000	48,000	---	---
113	82.418E	1171 Sansome	30,000	30,000	---	---
113	82.418E	220 Green	3,520	3,520	---	---
130	83.612C	1558 Powell	2,500	2,500	---	---
136	83.476V	962 Battery	15,000	15,000	---	---
192	83.412ED	1055 Stockton	---	---	81,500	66,500
194	83.128E	732 Washington	17,500	17,500	11,240	11,240
195	82.643E	660 Washington	3,938	3,938	---	---
227	82.463E	505 Montgomery	327,300	300,670	12,100	-4,775
228	83.422E	560 Sacramento	48,000	31,000	---	---
229	83.222EC	Embarcadero West	575,000	382,000	9,000	9,000
236	82.511E	222 Front	40,250	33,400	3,250	0
258	82.421E	Pine/Kearny	186,000	186,000	6,750	6,750
266	83.420ED	98 Battery	169,000	106,500	---	---
267	83.421ED	225 Pine	134,000	134,000	---	---
285	83.148E	665 Bush (M)	12,400	2,600	---	-2,700
287	83.91ED	237 Kearney/Bush	99,600	87,800	6,100	2,400
309	83.333E	212 Stockton	32,220	15,885	21,700	16,200
326	8312187	156 Ellis	3,200	3,200	---	---
327	82.445E	Stockton/O'Farrell	43,300	25,750	57,950	28,000
331	81.448E	Mixed Use Development (M)	50,000	50,000	70,000	49,000
336	83.21ECV	440 Turk	25,000	8,150	---	---
642	83.218V	1699 Van Ness	20,000	20,000	---	---
814	81.540E	101 Hayes	132,000	132,000	6,000	6,000
3526	83.475V	530-550 9th	42,300	42,300	---	---
3702	83.196E	1169 Market, Trinity	820,000	805,000	40,000	40,000

TABLE C-1
(continued)

PROJECTS UNDER FORMAL REVIEW (continued)

Assessor's Block	Case No.	Project Name	Office Gross Sq. Ft. Total New Construction	Office Gross Sq. Ft. Net New Construction	Retail Gross Sq. Ft. Total New Construction	Retail Gross Sq. Ft. Net New Construction
3704	83.404	901 Market, Penney's	145,500	126,000	80,000	80,000
3705	83.314E	5th and Market	880,000	778,000	120,000	40,000
3707	SFRA	YBC Office Bldg.	593,000	593,000	---	---
3708	81.297ED	Lincoln Plaza (562 Mission)	405,000	265,000	10,000	10,000
3708	83.75E	49 Stevenson	169,600	136,900	9,800	-2,900
3721	83.331E	100 First @ Mission	348,920	342,000	---	---
3721	83.40EZD	524 Howard	279,000	279,000	15,000	15,000
3735	83.313E	35 Hawthorne	47,400	47,400	2,900	2,900
3736	83.311E	299 2nd @ Folsom	206,000	171,000	10,000	10,000
3744	84.41E	Hills Brothers	635,000	535,000	40,000	40,000
3749	83.464EV	50 Guy Place	17,500	17,500	---	---
3752	83.310E	837 Folsom	200,000	200,000	---	---
3769	83.213EV	59 Harrison	113,500	49,750	---	---
3776	83.451E	501 Bryant	67,000	35,000	14,000	4,000
3778	83.547E	775 Bryant	27,890	27,890	3,675	3,675
3786	82.33E	655 5th/Townsend	126,250	126,250	---	---
3786	83.272EV	525 Brannon	13,500	13,500	---	---
3788	82.352EV	640 2nd Street	39,100	37,400	---	---
3789	82.31EV	615 2nd/Brannan (C)	90,000	70,000	9,300	9,300
3794	83.545V	139 Townsend	51,200	50,000	---	---
3923	81.491EVF	1550 Bryant	80,600	49,600	---	---
-	SFRA	Yerba Buena Gardens	1,340,000	1,340,000	---	---
-	SFRA	Rincon Point/S. Beach	760,000	760,000	---	---
	TOTAL PROJECTS UNDER FORMAL REVIEW		**9,744,260**	**8,721,295**	**643,265**	**442,590**

(C) = Conversion (generally industrial and/or warehouse to office)
(M)= Mixed Use (office/residential/commercial)

TABLE C-1
(continued)

APPROVED PROJECTS

Assessor's Block	Case No.	Project Name	Office Gross Sq. Ft. Total New Construction	Office Gross Sq. Ft. Net New Construction	Retail Gross Sq. Ft. Total New Construction	Retail Gross Sq. Ft. Net New Construction
65	82.168V	990 Columbus	12,000	12,000	---	---
112	81.258	Ice House Conversion (C)	209,000	209,000	---	---
164	81.573D	50 Osgood Place	22,500	22,500	9,100	9,100
176	82.368E	900 Kearny	25,000	25,000	5,000	5,000
176	83.229E	801 Montgomery	31,800	31,800	6,200	6,200
225	81.403ED	814 Stockton	3,500	3,500	3,300	3,300
265	81.195ED	388 Market at Pine (M)	234,500	85,500	10,000	-8,500
268	81.422D	250 Montgomery at Pine	105,700	65,700	8,000	8,000
271	83.13E	582 Bush	18,100	18,100	800	800
288	81.687ED	222 Kearny/Sutter	150,000	49,950	10,000	-8,400
294	82.870	44 Campton Place	7,600	7,600	---	---
642	82.224VEC	1750 California	82,525	82,525	---	---
647	82.24V	1581 Bush (C)	16,000	16,000	---	---
669	81.667ED	1361 Bush	13,000	13,000	---	---
690	SFRA	Post/Van Ness	88,000	88,000	---	---
716	81.581ED	Polk/O'Farrell (M)	61,600	61,600	22,400	22,400
818	83.94EV	583-591 Hayes (C)	4,900	4,900	---	---
3524	82.137V	44 Gough (C)	30,000	30,000	---	---
3702	81.549ED	1145 Market	137,500	108,500	8,000	8,000
3705	80.315	Apparel Mart III	332,400	332,400	---	---
3707	81.492ED	90 New Montgomery	124,300	124,300	3,350	3,350
3707	81.245DA	New Montgomery Place	227,500	209,700	2,200	-3,900
3708	81.493ED	71 Stevenson	324,600	324,600	6,200	6,200
3709	81.113ED	Central Plaza	353,100	136,300	17,400	17,400
3717	81.183E	123 Mission	342,800	342,800	---	---
3724	81.102E	Holland Ct. (C)	27,850	27,850	---	---
3729	82.860	774 Tehama	5,800	5,800	---	---
3733	EE81.2	868 Folsom	65,000	65,000	---	---
3733	82.29E	832 Folsom	50,000	50,000	---	---
3735	SFRA	75 Hawthorne (C)	61,900	61,900	---	---
3738	DR80.5	315 Howard	294,000	294,000	3,200	3,200
3749	EE81.18	Marathon - 2nd & Folsom	686,700	686,700	35,300	35,300
3750	82.241E	600 Harrison	228,000	228,000	10,000	10,000
3750	82.77V	642 Harrison (C)	54,400	45,900	---	---
3764/74	82.591E	Second Street Square (C)	333,000	263,000	25,000	25,000
3775	81.147V	338-340 Brannan (C)	36,000	36,000	---	---

TABLE C-1
(continued)

APPROVED PROJECTS (continued)

Assessor's Block	Case No.	Project Name	Office Gross Sq. Ft. Total New Construction	Office Gross Sq. Ft. Net New Construction	Retail Gross Sq. Ft. Total New Construction	Retail Gross Sq. Ft. Net New Construction
3776	EE81.59	Welsh Commons (M)	55,600	55,600	12,000	12,000
3788	81.296Z	690 2nd/Townsend (C)	16,600	16,600	16,000	16,000
3789	81.552EV	625 2nd/Townsend (C)	157,000	157,000	---	---
3794	81.569EV	123 Townsend	104,000	49,500	---	---
3794		155 Townsend	19,000	19,000	---	---
3803	81.244D	China Basin Expansion	196,000	196,000	---	---
9900	81.63E	Ferry Building Rehab	309,500	97,500	163,500	124,000
	TOTAL APPROVED PROJECTS		**5,658,275**	**4,760,625**	**376,950**	**294,450**

(C) = Conversion (generally industrial and/or warehouse to office)
(M)= Mixed Use (office/residential/commercial)

TABLE C-1
(continued)

PROJECTS UNDER CONSTRUCTION

Assessor's Block	Case No.	Project Name	Office Gross Sq. Ft. Total New Construction	Office Gross Sq. Ft. Net New Construction	Retail Gross Sq. Ft. Total New Construction	Retail Gross Sq. Ft. Net New Construction
58	82.234E	Roundhouse (C)	45,000	45,000	3,000	3,000
136	81.245	955 Front/55 Green	50,000	50,000	---	---
143	81.353ED	1000 Montgomery (C)	39,000	39,000	---	---
146	83.99EC	644 Broadway	42,800	42,800	---	---
161	DR80.191	Mirawa Center	36,000	36,000	30,650	30,650
166	DR80.15	750 Battery	105,400	105,400	12,800	12,800
166	CU81.7	222 Pacific at Front (C)	142,000	142,000	---	---
167	SFRA	Golden Gateway III	103,000	103,000	---	---
176	81.673EACV	Columbus/Pacific (Savoy)	49,000	49,000	22,000	22,000
208	81.104EDC	Washington/Montgomery (M)	235,000	233,300	4,000	-1,200
227	EE80.296	Bank of Canton	230,500	177,500	---	-800
239	DR80.1	456 Montgomery	160,550	160,550	24,250	24,250
240	81.705ED	580 California/Kearny	329,500	260,000	6,500	6,500
261	81.249ECQ	345 California (M)	640,000	466,500	15,500	15,500
262	81.206D	130 Battery	41,000	41,000	---	---
270	81.175ED	466 Bush	86,700	86,700	7,800	2,200
271	81.517	453 Grant	27,500	27,500	6,200	6,200
288	81.461EC	333 Bush (Campeau) (M)	498,400	458,100	20,900	20,900
288	DR80.24	101 Montgomery	264,000	234,000	4,900	-14,100
289	81.308D	One Sansome	603,000	603,000	7,000	7,000
311	82.120D	S. F. Federal	246,800	218,850	1,600	-9,440
351	DR79.24	Mardikian/1170 Market	40,000	40,000	---	---
641	82.200CV	1735 Franklin (C)	8,600	8,600	---	---
672	SFRA	Wealth Investments	104,500	104,500	---	---
743	SFRA	Van Ness/Turk (Vanguard)	85,000	85,000	---	---
767	STATE	State Office Building	293,300	293,300	---	---
816	82.212ED	300-350 Gough (M/C)	16,000	16,000	---	---
834	82.603E	25 Van Ness (C)	101,800	42,800	36,400	36,400
3512	82.14	Van Ness Plaza	170,000	170,000	6,000	6,000
3715	82.16EC	121 Steuart	33,200	33,200	---	---
3715		141 Steuart	80,000	80,000	---	---
3717	EE79.236	101 Mission	219,350	219,350	---	---
3717	EE80.349	Spear/Main (160 Spear)	279,000	279,000	7,600	7,600
3717	82.82D	135 Main	260,000	260,000	4,000	4,000
3722	81.417ED	144 Second at Minna	30,000	30,000	---	---
3741	82.203C	201 Spear	229,000	229,000	5,200	5,200
3787	81.306	252 Townsend at Lusk	61,000	61,000	---	---
	TOTAL PROJECTS UNDER CONSTRUCTION		**5,985,900**	**5,530,950**	**226,300**	**184,660**
	TOTAL (ALL PROJECTS)		**21,388,430**	**19,012,870**	**1,246,515**	**921,700**

(C) = Conversion (generally industrial and/or warehouse to office)
(M) = Mixed Use (office/residential/commercial)

Source: San Francisco Department of City Planning

TABLE C-2

GROSS SQUARE FEET OF CUMULATIVE OFFICE AND RETAIL DEVELOPMENT IN DOWNTOWN SAN FRANCISCO AS OF March 10, 1984

	Office (Gross Sq. Ft.)		Retail (Gross Sq. Ft.)	
Status of Project	Total New Construction	Net New Construction	Total New Construction	Net New Construction
Under Formal Review	9,744,260	8,721,295	643,265	442,590
Approved	5,658,275	4,760,625	376,950	294,450
Under Construction	5,985,900	5,530,950	226,300	184,660
Grand Totals	**21,388,430**	**19,012,870**	**1,246,515**	**921,700**

TABLE C-3

MAJOR OFFICE BULDING CONSTRUCTION
IN SAN FRANCISCO (IN GROSS SQUARE FEET)

Year	Total Gross Square Feet Completed	5-Year Total	5-Year Annual Average	Cumulative Total of Office Buildings[2]	Cumulative Total of All Downtown Office Buildings[3]
Pre-1960				28,145,000	24,175,000
1960	1,183,000				
1961	270,000				
1962	-				
1963	-				
1964	1,413,000				
1960-1964		2,866,000 (2,580,000)[1]	573,200 (516,000)[1]	30,725,000	26,754,000
1965	1,463,000				
1966	973,000				
1967	1,453,000				
1968	1,234,000				
1969	3,256,000				
1965-1969		8,379,000 (7,541,000)[1]	1,675,800 (1,508,000)[1]	38,266,000	34,295,000
1970	1,853,000				
1971	-				
1972	1,961,000				
1973	2,736,000				
1974	2,065,000				
1970-1974		8,615,000 (7,753,000)[1]	1,723,000 (1,550,000)[1]	46,019,000	42,048,000

(continued)

Cum Dev. App.

TABLE C-3

MAJOR OFFICE BULDING CONSTRUCTION
IN SAN FRANCISCO (IN GROSS SQUARE FEET)
(continued)

Year	Total Gross Square Feet Completed	5-Year Total	5-Year Annual Average	Cumulative Total of All Office Buildings[2]	Cumulative Total of All Downtown Office Buildings[3]
1975	536,000				
1976	2,429,000				
1977	2,660,000				
1978	-				
1979	2,532,000				
1975-1979		8,157,000 (7,341,000)[1]	1,631,400 (1,468,000)[1]	53,360,000	49,389,000
1980	1,284,000				
1981	3,029,000				
1982	3,771,000				
1983	4,107,700				
1980-1983		12,191,700[4] 10,972,500[1]	3,047,900[4] 2,743,100[1]	64,332,500	62,100,000

[1]Total net square feet (90% of gross). Net new space is added at an increase factor of 90%, since it is assumed that space equal to 10% of a new building is demolished to make land available for the new replacement building.

[2]Source: San Francisco Downtown Zoning Study, Working Paper No. 1, January 1966, Appendix Table 1, Part 1. For pre-1965, data include the area bounded by Vallejo, Franklin, Central Skyway, Gryant and Embarcadero. Also includes one-third of retail0office mixed use. For post-1964, data inlcude the entire city.

[3]Gross Floor Space for downtown offices are included for the following functional areas: Financial, Retail, Hotel, Jackson Square, Golden Gateway, Civic Center, South of Market and Outer Market Street as defined in the cited January 1966 report. For post-1964, the entire area east of Franklin Street is included.

[4]Four year total and average.

Source: Department of City Planning, March 15, 1983

Revised

TABLE D-1

PROJECTED EFFECTS OF DOWNTOWN OFFICE DEVELOPMENT ON REGIONAL HOUSING MARKETS

Housing Market	Net Project Demand in 1985 Number of Households	Gross Cumulative Demand[3] 1982 to 1990 Number of Employees	Gross Cumulative Demand[3] 1982 to 1990 Number of Households	Net[4] Housing Stock 1982-1990	Project Demand as % of Growth 1982-1990	Cumulative Demand as % of Growth 1982-1990
San Francisco[1]	54-112	11,400 to 30,400	8,100 to 16,900	12,000	0.5-0.9	68-141
North Bay[2] (Marin and Sonoma Counties)	35	6,800	5,200	36,800	0.1	14
Peninsula[2] (San Mateo and Santa Clara Counties)	50	9,900	7,600	87,600	0.1	9
East Bay[2] (Alameda and Contra Costa Counties)	147	28,900	22,200	111,800	0.1	20
TOTAL[5]	345	76,000	51,900	248,200	0.1	21

[1]The range of San Francisco employees and households based on a report prepared by Recht Hausrath Associates, referenced as Appendix C in the 10 Montgomery Street Final EIR, EE 80.26, certified May 7, 1981 (15-30% of all employees would reside in San Francisco and 1.4 workers would occupy each household) and "Office Housing Production Program (OHPP) Interim Guidelines," Department of City Planning, January 22, 1982 (40% of all employees would reside in San Francisco and 1.8 workers would occupy each household).

[2]Distribution of employees is based on the Department of City Planning "Guidelines for Environmental Review: Transportation Impacts September 1983," page 13. The percentages have been weighted to account for OHPP Guidelines (i.e., 40% of employees reside in San Francisco) as follows 9% in the North Bay, 13% on the Peninsula, and 38% in the East Bay. The net project household demand is based on net new office workers and an average of 1.3 workers per household, based on 1980 Census Data.

[3]Cumulative housing demand calculated from data on office projects presented in Table E-2, Appendix E including those under construction (4,791,650), approved (4,724,650 sq. ft.), under formal review (3,282,270 sq. ft.), and completed but included in baseline (6,062,750 sq. ft.).

[4]Net housing stock growth is based on "Projections 79," Association of Bay Area Governments, January 1980. Projections contained in that document for 1980-1990 were prorated to reflect 1982-1990 net housing stock growth.

[5]The total reflects the high end of the range for San Francisco housing demand. If the low end of the range occurs in San Francisco, then the housing demand in other areas would be higher than shown in the table, since the total housing demand will remain constant regardless of the regional distribution.

Source: EIP Corporation.

TABLE D-2

HOUSING AFFORDABILITY BY HOUSEHOLD INCOME

Gross Annual Income Per Household or Per Individual	Maximum Affordable Monthly Housing[1] Expenditure	Housing Cost and Type of Unit	
		Monthly[2] Cost	Type of Unit (Price)
$ 5,000	$ 125		
10,000	250		
10,260[3]	257		
10,680	267	$ 267-	Census Median Rent[6]
11,560	289	289-	Studio Apartments[7]
15,000	375		
18,200	455	455-	Median Rent, All Units[7]
20,000	500		
23,520	588	588-	Rent, 3+ Bedroom Units[7]
25,000	625		
30,000	750		
33,700[4]	840		
35,000	875		
40,000	1,000		
40,880	1,022	1,022-	Lowest House Price ($95,000)[8]
45,000	1,125	1,125-	Census Median Value (104,600)[6]
50,000	1,250		
52,560[5]	1,314		
55,000	1,375		
64,960	1,620		
65,080	1,627	1,627-	Median House Price (151,203)[8]
101,880	2,547	2,547-	Highest House Price (236,750)[8]
370,800[5]	9,270		

Footnotes on following page

[1]The Office Housing Production Program (OHPP) Interim Guidelines, January 1982, define affordable housing as follows:

> Rental expenses not exceeding 30% of gross monthly income, adjusted for family size; and home ownership expenses not exceeding 38% of gross monthly income, adjusted for family size, including mortgage payments, property taxes, insurance, and/or homeownership association dues.
>
> For the purpose of this table, 30% of gross monthly income is used to calculate housing affordability for both renters and owners. For owners it is assumed that 8% of gross monthly income would cover property taxes, insurance, and/or homeownership association dues and other related expenses. No adjustment has been made for family size because family circumstances vary widely.

[2]Monthly housing costs refer to rents and mortgage payments for the housing prices shown in parentheses; sources of rents and house prices are as footnoted. Monthly costs of ownership housing were calculated as monthly mortgage expenses assuming 20% down payment, 30-year mortgage, and 16% interest rate, not including insurance, property taxes, and other related housing costs.

[3]U.S. Bureau of Labor Statistics, Area Wage Survey for the San Francisco-Oakland, California Metropolitan Area, March 1981. $8,300 was the mean 1980 income of inexperienced file clerks, one of the lowest-paid office occupations listed. This value has been inflated to 10,260 in 1983 dollars using the Consumer Price Index for all urban consumers in the San Francisco - Oakland SMSA.

[4]The $33,700 income figure was derived by inflating the $16,300 median income of downtown office workers from the 1974 SPUR survey through October, 1983 using U.S. Bureau of Labor Statistics national wage information for nonsupervisory finance, insurance, and real estate sector employees through December 1981 and the Consumer Price Index thereafter.

[5]Montgomery-Washington Building FEIR, 81.104E, certified January 28, 1982. The median salary of wage earners at 601 Montgomery Street was estimated to be $52,560 and the highest salary for corporate officers $300,000, according to a 1981 survey. These figures have been updated to October, 1983 using the Consumer Price Index.

[6]City Planning and Information Services, 1980 Census Information, March 1982. Rental data include residential hotels whose rent levels may be substantially lower than other types of rental dwellings and may therefore have an effect on the median rent.

[7]Department of City Planning, Rent Survey, 1980. These data are based on a small nonrandom sample of newspaper ads and may not reflect true rental costs.

[8]San Francisco Board of Realtors, Multiple Sales Service, October 5, 1981. (Annual data on housing sales prices including all homes sold from February 11, 1981 to October 1, 1981).

NOTE: The age of the 1974 SPUR study referenced in footnote 4 above and the small sample size of the 601 Montgomery Street survey referenced in footnote 5 limit the statistical accuracy of the data when applied to individual proposed office projects. These two sources constitute the only salary information available for downtown San Francisco employees.

APPENDIX E

AIR QUALITY

SAN FRANCISCO AIR POLLUTANT SUMMARY 1979-1982[1]

POLLUTANT	FEDERAL STANDARD[2]	STATE STANDARD[3]	1979	1980	1981	1982
Carbon Monoxide (CO)						
1-hour average (ppm)	35	20				
Highest hourly average			20	10	8	—
No. of exceedances			0	0	0	0
8-hour average (ppm)	9	None				
Highest 8-hour average			13.8	7.5	5.3	9
No. of exceedances			1	0	0	1
Ozone (0_3)						
1-hour average (ppm)	.12[4]	.10				
Highest hourly average			0.08	0.09	0.07	.08
No. of exceedances			0	0	0	0
Nitrogen Dioxide (NO_2)						
1-hour average (ppm)	None	.25				
Highest hourly average			0.16	0.17	0.11	.13
No. of exceedances			4	0	0	0
Sulphur Dioxide ($S0_2$)						
24-hour average (ppm)	.14	.05				
Highest 24-hour average			0.034	0.018	0.016	.012
No. of exceedances			0	0	0	0
Total Suspended Particulate (TSP)						
24-hour average (ug/m^3)	260	100				
Highest 24-hour average			117	173	103	106
No. of exceedances			1	6	1	3

SAN FRANCISCO AIR POLLUTANT SUMMARY 1979-1982[1]

POLLUTANT	FEDERAL STANDARD[2]	STATE STANDARD[3]	1979	1980	1981	1982
Annual Geometric Mean (ug/m^3)[5]	None	60				
Annual Geometric Mean			42.0	52.1	56.0	57.0
Annual Exceedances			No	No	No	No
Lead						
3-month Average (mg/m^3)	1.5	None				
Highest 3-month average			0.95	0.53	0.35	—
No. of exceedances			0	0	0	---
1-month Average (mg/m^3)	None	1.5	—	—	—	—
No. of exceedances	—	—	—	—	—	—

[1]1979 data collected at 939 Ellis Street. 1980-81 data collected at 900 23rd Street.

[2]Federal standard is not to be exceeded more than once per year. Annual average standards are not be exceeded.

[3]State standards are not to be equalled or exceeded. The state 1-hour average CO standard was reduced from 40 ppm to 20 ppm in 1982.

[4]The federal standard is given in terms of Expected Annual Excesses which is based on a 3-year running average.

[5]The annual Geometric Mean is a single number which applies to an entire year of data. "No" indicates TSP concentrations did not exceed 60 (ug/m^3).

Note: ppm = parts per million
ug/mg^3 = micrograms per cubic meter
mg/m^3 = milligrams per cubic meter

Source: BAAMQD, Air Pollution in the Bay Area by Station and Contaminant, March issues, 1980-1983; and California Air Resources Board, California Air Quality Data, Annual Summaries, 1979-1982.